Primer on
Interagency Research Collaboration

Interagency
Committee on
Disability
Research
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Contents

Introduction

Purpose of the Primer

The purpose of this primer is to provide members of the Interagency Committee on Disability Research (ICDR) with an overview of best practices to promote interagency collaboration, enhance ICDR members' knowledge base about interagency collaboration, increase members' capacity to promote interagency collaboration, promote better understanding about the complex nature of interagency relationships, and identify strategies to support sustained partnerships.

The strategies in the primer are designed to promote Federal interagency collaborative activities by familiarizing ICDR members with current practical strategies for interagency collaboration. Central ideas and key strategies are organized by topic. This primer is a reference guide based on three primary sources:

For agencies that fund research, collaboration is used to answer research questions that are most effectively addressed through collaborative studies; to share responsibility, expertise or perspective; to pool financial and human resources; to increase efficiency and funding opportunities; or to gain greater credibility (Resnik, L., Reiber, G. E., Staeger, P., Evans, R. K., Barnabe, K., & Hayman, K., 2013).

Literature review. The literature review examined academic literature and published reports to find articles that: identified factors for successful Federal interagency research collaboration; provided information that is relevant and useful to the ICDR as it promotes research collaboration; and will assist ICDR members in planning and executing interagency research projects and related activities.

Documents from other Federal interagency research efforts. A review of existing interagency committees documented the methods used to foster research collaboration and coordination by examining published reports, history, mission, membership, scope of authority, strategic planning processes, operating format, and stakeholder input procedures. Excluded were interagency efforts concerned with service provision and interagency committees whose function was strictly advisory.

Expert panel findings and recommendations. The ICDR convened an expert panel on *Creating a Sustainable Interagency Coordination Network on Disability Research*. The panel worked from December 2013 through May 2014 to examine interagency collaboration efforts related to disability research and how collaboration can be better achieved; examine the organizational culture of collaboration; determine implications for better alignment of priorities and strategies; and outline approaches to increase interagency partnerships to ensure a coordinated, strategic Federal program of disability research. Panel discussions resulted in specific recommendations to help promote collaboration in disability research (Interagency Committee on Disability Research Expert Panel, 2014).

Strategies

Based on the sources listed above, the strategies for interagency collaboration covered in this primer align with following themes:

- Practices That Promote Collaborative Efforts
- Key Issues in Implementing Interagency Collaborative Mechanisms
- Implementation Approaches Used to Enhance Collaboration in Interagency Groups
- State of the Science Review
- Strategic Plans
- Research Portfolio Databases
- Dissemination of Research Results
- The Enterprise Structure
- Committee Operations

Definitions

For the purpose of this primer, **collaboration** is defined as "any joint activity that is intended to produce more public value than could be produced when the agencies act alone" (Government Accountability Office, 2005, p. 5).

Interagency collaboration can be used for policy development, program implementation, oversight and monitoring, information sharing and communication, and building organizational capacity (Government Accountability Office, 2012) and can serve to reduce potentially fragmented, overlapping, and duplicative efforts. The Government Accountability Office (2014a) defined these terms as follows:

- **Fragmentation** refers to those circumstances in which more than one Federal agency (or more than one organization within an agency) is involved in the same broad area of national need and opportunities exist to improve service delivery.

- **Overlap** occurs when multiple agencies or programs have similar goals, engage in similar activities or strategies to achieve them, or target similar beneficiaries.

- **Duplication** occurs when two or more agencies or programs are engaged in the same activities or provide the same services to the same beneficiaries

Kaiser (2011) identified six types of interagency arrangements:

- **Collaboration** relies on voluntary or discretionary participation among the members, who are relatively equal or have parity in the activity.

- **Coordination** occurs when a lead agency or officer directs an operation, project, or program among one or more other agencies.

- **Merger** transfers all or parts of different agencies or their authorities, jurisdictions, personnel, and resources on a permanent basis to another organization, either a new or existing department, agency, bureau, office, or other entity.

- **Integration** brings together relevant parts of agencies on either a long-term or a temporary ad hoc basis, to carry out a particular operation, project, program, or policy; these endeavors, unlike mergers, involve nonpermanent transfers of personnel, resources, or authority among relevant agencies.

- **Networks** involves the Federal Government and all or several other levels of government: Federal, state, local, tribal, or, in some cases, foreign countries.

- **Partnerships** feature public-private partnerships, with the public sector entities extending from the Federal Government to state, local, or tribal governments, as well as, in some cases, foreign governments; and with the private sector involving different types of entities: non-governmental organizations (NGOs), not-for-profit organizations, for-profit companies and firms, government- sponsored enterprises, and government-chartered corporations.

Practices That Promote Collaborative Efforts

The Government Accountability Office (2005) put forth eight practices that agencies could use to promote collaborative efforts. GAO defined collaboration as "any joint activity that is intended to produce more public value than could be produced when the agencies act alone" (p. 6). For a number of these practices, GAO stated that "it is critical to involve nonfederal partners, key clients, and stakeholders in decisionmaking. Additionally, running throughout these practices are a number of factors such as leadership, trust, and organizational culture that are necessary elements for a collaborative relationship" (p. 5). Agencies can enhance and sustain their collaborative efforts by engaging in these eight practices (GAO, 2005):

Define and Articulate the Common Outcome

To overcome significant differences in agency missions, cultures, and established ways of doing business, collaborating agencies must have a clear and compelling rationale to work together. The compelling rationale for agencies to collaborate can be imposed externally through legislation or other directives or can come from the agencies' own perceptions of the benefits they can obtain from working together. The collaborative effort requires agency staff working across agency lines to define and articulate the common federal outcome or purpose they are seeking to achieve that is consistent with their respective agency goals and mission. Moreover, the development of a common outcome takes place over time and requires sustained resources and commitment. In defining and articulating a common outcome, where appropriate, federal agencies should involve nonfederal partners, key clients, and stakeholders. In doing so, federal agencies can better address their interests and expectations and gain their support in achieving the objectives of the collaboration.

Establish Mutually Reinforcing or Joint Strategies

To achieve a common outcome, collaborating agencies need to establish strategies that work with those of their partners, or are joint in nature. Such strategies help to align the partner agencies' activities, core processes, and resources to accomplish the common outcome.

Identify and Address Needs by Leveraging Resources

Collaborating agencies should identify the human, information technology, physical, and financial resources needed to initiate or sustain their collaborative effort. Collaborating agencies bring different levels of resources and capacities to the effort. By assessing their relative strengths and limitations, collaborating agencies can look for opportunities to address resource needs by leveraging resources, obtaining additional benefits that would not be available if they were working separately.

Agree on Roles and Responsibilities

Collaborating agencies should define and agree on their respective roles and responsibilities, clarify who will do what, and specify how the collaborative effort will be led. Committed leadership by those involved in the collaborative effort, from all levels of the organization, is needed to overcome the barriers to working across agency boundaries.

Establish Compatible Policies, Procedures, and Other Means to Operate across Agency Boundaries

To facilitate collaboration, agencies need to address the compatibility of standards, policies, procedures, and data systems that will be used in the collaborative effort. It is also important to address cultural differences to enable a cohesive working relationship and to create the mutual trust required to enhance and sustain the collaborative effort. Frequent communication among collaborating agencies is another means to facilitate working across agency boundaries and prevent misunderstanding.

Develop Mechanisms to Monitor, Evaluate, and Report Results

Federal agencies engaged in collaborative efforts need to create a way to monitor and evaluate their efforts to enable them to identify areas for improvement. Reporting on these activities can help key agency decision makers, clients, and stakeholders obtain feedback for improving operational effectiveness.

Reinforce Agency Accountability for Collaborative Efforts through Agency Plans and Reports

Federal agencies can use their strategic and annual performance plans as tools to drive collaboration with other agencies and establish complementary goals and strategies for achieving results. These plans can also reinforce accountability for the collaboration by aligning agency goals and strategies with those of the collaborative efforts. Accountability for collaboration is reinforced through public reporting of agency results.

Reinforce Individual Accountability for Collaborative Efforts through Performance Management Systems

Individual accountability for collaborative efforts can be accomplished through performance management systems by identifying competencies related to collaboration and setting performance expectations for collaboration.

Key Issues in Implementing Interagency Collaborative Mechanisms

The Government Accountability Office (2012) (GAO) identified issues to consider when implementing collaborative mechanisms. GAO conducted a literature review on interagency collaborative mechanisms, interviewed 13 academic and practitioner experts in the field of collaboration, and reviewed the work of these experts. GAO also conducted a detailed analysis of 45 of its reports selected from more than 300 reports published between 2005 and 2012 that examined aspects of collaboration within the federal government. Based on this review, GAO identified key issues to consider for implementing interagency collaborative mechanisms. Per the GAO, the template described below provides guidance for any interagency undertaking.

Outcomes and accountability

- Have short-term and long-term outcomes been clearly defined?

- Is there a way to track and monitor progress toward the short-term and long-term outcomes?

- Do participating agencies have collaboration-related competencies or performance standards against which individual performance can be evaluated?

- Do participating agencies have the means to recognize and reward accomplishments related to collaboration?

Bridging organizational cultures

- What are the missions and organizational cultures of the participating agencies?

- What are the commonalities between the participating agencies' missions and cultures and what are some potential challenges?

- Have participating agencies developed ways for operating across agency boundaries?

- Have participating agencies agreed on common terminology and definitions?

Leadership

- Has a lead agency or individual been identified?

- If leadership will be shared between one or more agencies, have roles and responsibilities been clearly identified and agreed upon?

- How will leadership be sustained over the long-term?

Clarity of roles and responsibilities

- Have participating agencies clarified the roles and responsibilities of the participants?

- Have participating agencies articulated and agreed to a process for making and enforcing decisions?

Participants

- Have all relevant participants been included?

- Do the participants have:

  > Full knowledge of the relevant resources in their agency?

> The ability to commit these resources?

> The ability to regularly attend activities of the collaborative mechanism?

> The appropriate knowledge, skills, and abilities to contribute?

Resources

- How will the collaborative mechanism be funded? If interagency funding is needed, is it permitted?

- If interagency funding is needed and permitted, is there a means to track funds in a standardized manner?

- How will the collaborative mechanism be staffed?

- Are there incentives available to encourage staff or agencies to participate?

- If relevant, do agencies have compatible technological systems?

- Have participating agencies developed online tools or other resources that facilitate joint interactions?

Written guidance and agreements

- If appropriate, have the participating agencies documented their agreement regarding how they will be collaborating? A written document can incorporate agreements reached in any or all of the following areas: Leadership; Accountability; Roles and Responsibilities; and Resources.

- Have participating agencies developed ways to continually update or monitor written agreements?

Implementation Approaches Used to Enhance Collaboration in Interagency Groups

The previous sections summarized GAO's 2005 report (Government Accountability Office, 2005) which identified practices that can help enhance and sustain collaboration among federal agencies, and its 2012 report (Government Accountability Office, 2012) on the multiple interagency mechanisms that the Federal government uses to collaborate. For its 2014 report, GAO selected four interagency groups that used those key practices identified in the 2005 report to learn about which approaches they used and found to be successful (Government Accountability Office, 2014b). These groups addressed issues of homelessness, reentry of former inmates into society, rental housing policy, and the education of military dependent students. To identify successful approaches, GAO reviewed agency documents, interviewed agency officials who participated in these groups, and convened recipients of the Presidential Distinguished Rank Award who had experience with interagency collaboration.

The following table shows how select interagency groups: (1) defined outcomes; (2) measured performance and ensured accountability; (3) established leadership approaches; and 4) used resources, such as funding, staff and technology.

Key Considerations for Implementing Interagency Collaborative Mechanisms	Implementation Approaches from Select Interagency Groups
Outcomes ▪ Have short-term and long-term outcomes been clearly defined?	▪ Started group with most directly affected participants and gradually broadened to others. ▪ Conducted early outreach to participants and stakeholders to identify shared interests. ▪ Held early in-person meetings to build relationships and trust. ▪ Identified early wins for the group to accomplish. ▪ Developed outcomes that represented the collective interests of participants. ▪ Developed a plan to communicate outcomes and track progress. ▪ Revisited outcomes and refreshed interagency group.
Accountability ▪ Is there a way to track and monitor progress?	▪ Developed performance measures and tied them to shared outcomes. ▪ Identified and shared relevant agency performance data. ▪ Developed methods to report on the group's progress that are open and transparent. ▪ Incorporated interagency group activities into individual performance expectations.

Key Considerations for Implementing Interagency Collaborative Mechanisms	Implementation Approaches from Select Interagency Groups
Leadership ▪ Has a lead agency or individual been identified? ▪ If leadership will be shared between one or more agencies, have roles and responsibilities been clearly identified and agreed upon?	▪ Designated group leaders exhibited collaboration competencies. ▪ Ensured participation from high-level leaders in regular, in-person group meetings and activities. ▪ Rotated key tasks and responsibilities when leadership of the group was shared. ▪ Established clear and inclusive procedures for leading the group during initial meetings. ▪ Distributed leadership responsibility for group activities among participants.
Resources ▪ How will the collaborative mechanism be funded? ▪ How will the collaborative mechanism be staffed?	▪ Created an inventory of resources dedicated towards interagency outcomes. ▪ Leveraged related agency resources toward the group's outcomes. ▪ Pilot tested new collaborative ideas, programs, or policies before investing resources.

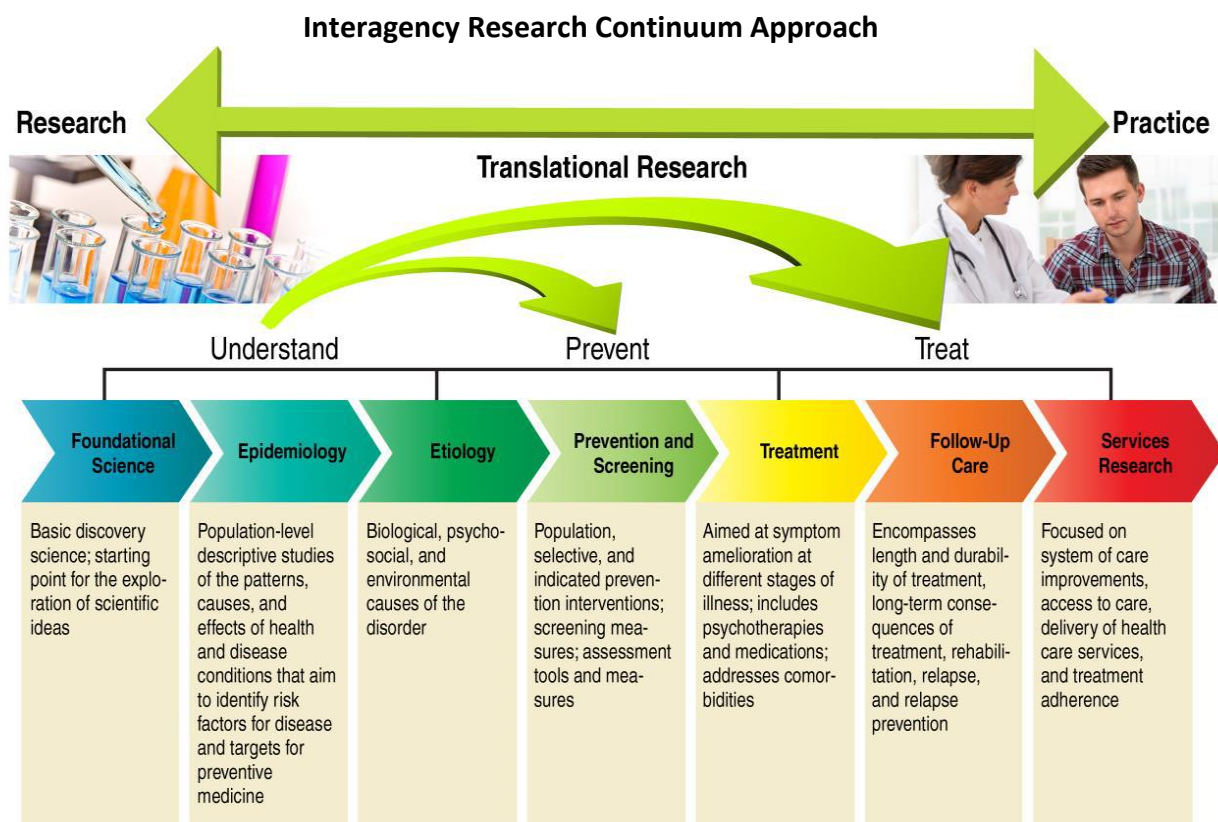SOURCE: Government Accountability Office (2014b)

State of the Science Review

Before beginning a research collaboration, most committees we reviewed conducted a review of past or current research. Depending upon the committee, this process is referred to as a state of the science review, a research inventory, or a research portfolio review. This review is accomplished through a variety of means such as literature searches to find published studies, committee members contributing information on studies underway in their agencies, state of the science conferences, and expert panels. The resulting inventory provides a detailed analysis of duplication, overlap, and fragmentation, and is used to plan future research or to develop or update strategic plans.

To be useful in planning collaborations, the inventory needs to be more than a listing of current or planned projects. The inventory must assess whether the research addressed knowledge gaps identified in a strategic plan and whether the research was contributing to advancing the plan priorities (Government Accountability Office, 2011). A report that provides only summaries of research projects is not sufficient to determine what new knowledge Federal research is contributing to the field or what new research is needed. The Government Accountability Office (2010) reviewed human factors research portfolio and found that it contained only a listing and description of projects and results, and lacked a cross-agency plan with role definitions, goals, and time frames. GAO concluded that a cross-agency plan that "establishes an agreed-upon set of initial focus areas for research, inventories existing facilities for research, and capitalizes on past and current research" (Government Accountability Office, 2010, p. 14) could help the collaborating agencies better follow the key practices for enhancing and sustaining collaboration identified by GAO in its 2005 report (Government Accountability Office, 2005).

Some interagency collaborations find it useful to identify scientific advances in their particular fields to form the basis for future research. For example, each year the Interagency Autism Coordinating Committee (IACC) releases a list of scientific advances that represent significant progress in the field. This *Summary of Advances* (Interagency Autism Coordinating Committee, 2014a) provides plain language synopses of the top research breakthroughs selected by the IACC from a pool of peer-reviewed articles nominated by the members. Articles are grouped according to the questions of the *IACC Strategic Plan for ASD Research* (Interagency Autism Coordinating Committee, 2014b). The Interagency Pain Research Coordination Committee uses a similar nomination and review procedure to document scientific advances (Interagency Pain Research Coordination Committee, 2013).

The agencies that developed the *National Research Action Plan* for post-traumatic stress disorder, traumatic brain injury, and suicide prevention research are using an Interagency Research Continuum Approach to conduct ongoing portfolio analyses of existing and emerging diagnostics, therapeutics and outcome measures and to facilitate analysis of gaps and identification of future focus areas (Departments of Defense, Veterans Affairs, Health and Human Services, & Education, 2013). The Interagency Research Continuum Approach is a research framework within which studies are organized along a progression of seven topic areas: foundational science, epidemiology, etiology, prevention and screening, treatment, follow-up care, and implementation research. The figure below illustrates this approach.

Interagency Research Continuum Approach

Foundational Science	Epidemiology	Etiology	Prevention and Screening	Treatment	Follow-Up Care	Services Research
Basic discovery science; starting point for the exploration of scientific ideas	Population-level descriptive studies of the patterns, causes, and effects of health and disease conditions that aim to identify risk factors for disease and targets for preventive medicine	Biological, psycho-social, and environmental causes of the disorder	Population, selective, and indicated prevention interventions; screening measures; assessment tools and measures	Aimed at symptom amelioration at different stages of illness; includes psychotherapies and medications; addresses comorbidities	Encompasses length and durability of treatment, long-term consequences of treatment, rehabilitation, relapse, and relapse prevention	Focused on system of care improvements, access to care, delivery of health care services, and treatment adherence

SOURCE: Departments of Defense, Veterans Affairs, Health and Human Services, & Education (2013)

In its report, the ICDR expert panel (Interagency Committee on Disability Research Expert Panel, 2014) recommended ways that the ICDR could conduct its review of disability research:

- **Identify research gaps by conducting a scan of current disability research.** Instead of taking on the universe of disability issues, identify agencies with overlapping interests, identify the research pieces needed, describe how they interact, and work on the issues where there is overlap. Recognize opportunities across agencies and develop a comprehensive narrative about disability and technology, disability and health disparities, and disability and employment.

- **Develop an inventory of Federal research priorities.** Identify disability related research by agency. Use this information to frame knowledge gaps in order to consider new priorities.

- **Establish a national clearinghouse.** Develop a system for program managers to report standardized information about funded projects, so that other program managers can see what is being funded. This on-going inventory should serve as a management system to inform the front end of the process better understand the federal investment and plans. This clearinghouse could map current research priorities and determine which agencies are addressing which topics and where research priority gaps exist.

Strategic Plans

The recently enacted Workforce Innovation and Opportunity Act (P.L. 113-128) , which amended the Rehabilitation Act of 1973, specifies the requirements for the ICDR strategic plan:

> (c)(1) The Committee shall develop a comprehensive government wide strategic plan for disability, independent living, and rehabilitation research.
> > (2) The strategic plan shall include, at a minimum –
> > > (A) a description of the -
> > > > (i) measurable goals and objectives;
> > > > (ii) existing resources each agency will devote to carrying out the plan;
> > > > (iii) timetables for competing the projects outlined in the plan; and
> > > > (iv) assignment of responsible individuals and agencies for carrying out the research activities;
> > > (B) research priorities and recommendations;
> > > (C) a description of how funds from each agency will be combined, as appropriate, for projects administered among Federal agencies, and how such funds will be administered;
> > > (D) the development and ongoing maintenance of a searchable government wide inventory of disability, independent living, and rehabilitation research for trend and data analysis across Federal agencies;
> > > (E) guiding principles, policies, and procedures, consistent with the best research practices available , for conducting and administering disability, independent living, and rehabilitation research across Federal agencies; and
> > > (F) a summary of underemphasized and duplicative areas of research.
> > (3) The strategic plan described in this subsection shall be submitted to the President and the Committee on Health, Education, Labor, and Pensions of the Senate and the Committee on Education and the Workforce of the House of Representatives.

As the ICDR prepares to undertake strategic planning, the following examples from other interagency committees and recommendations from the ICDR expert panel provide helpful input.

- The National Research Council (2009) undertook a review of the Federal strategy for nanotechnology-related environmental, health, and safety research and identified key elements of a research strategy: "an evaluation of the existing state of science, an overarching vision or statement of purpose, goals to ensure safe development of nanotechnologies, a road map for ensuring achievement of stated goals, evaluation for assessing progress in achieving the goals, a process of review to ensure the strategy remains responsive to the overarching vision and goals, identification of resources, mechanisms to achieve goals, and accountability" (p. 40).

- Interagency committees involved in strategic planning must also solicit and incorporate input from non-Federal stakeholders (Government Accountability Office, 2011); public comment on the draft plan is not sufficient (National Research Council, 2009). Involvement of external stakeholders lessens the tendency for Federal agencies to focus on research that can be done within existing capabilities and instead promotes agencies to focus on "What research should we be doing?" (National Research Council, 2009, p. 8). One approach for involving stakeholders emphasizes a community based participatory approach as an

appropriate model for stakeholder participation. This approach recognizes the value of equally involving all partners with their unique perspectives in the research development, implementation, and dissemination processes (Minkler & Wallerstein, 2008). Meaningful research requires that stakeholders be involved at the very beginning when a research topic is conceptualized and that the research leads to changing the lives of the people who can benefit from that research. Emphasizing the involvement of the people who can benefit from the research and the service providers who can implement research results will make it more likely that providers will adopt evidence-based services.

- The process used by the Diabetes Mellitus Interagency Coordinating Committee (2011) illustrates a comprehensive approach to strategic planning. One working group was convened for each of 10 scientific areas. An additional working group composed of representatives from each of the 10 groups addressed needed scientific expertise, tools, technologies, and shared resources. Each working group was chaired by and composed of external scientific experts, representatives of DMICC member agencies, and diabetes organizations. The working groups surveyed the state of the science and developed a summary of progress and needed research relevant to each goal. A public comment period allowed for stakeholder input. Each of the 10 chapters in the strategic plan includes an introduction, summaries of recent research advances, key research questions and goals, and a summary of how the research outlined in the chapter will improve the health of people with respect to diabetes.

- The Interagency Autism Coordinating Committee (2014b) updates its strategic plan each year by determining what the field already knows, and what else it needs.

The table below contains links to six interagency research committees and their strategic plans, portfolio analyses, and scientific advances documents.

Summary of Interagency Planning Documents	
Committee	**Planning documents**
Diabetes Mellitus Interagency Coordinating Committee Coordinate research in NIH and all Federal programs related to diabetes mellitus and its complications.	*Advances and Emerging Opportunities in Diabetes Research: Strategic Planning Report of the Diabetes Mellitus Interagency Coordinating Committee*. (February 2011) http://www.niddk.nih.gov/about-niddk/strategic-plans-reports/Pages/advances-emerging-opportunities-in-diabetes-research.aspx
Interagency Autism Coordinating Committee Facilitate the efficient and effective exchange of information on autism activities among member agencies and coordinates autism-related programs and initiatives.	IACC Strategic Plan for Autism Spectrum Disorder (ASD) Research–2013 Update. (April 2014). http://iacc.hhs.gov/strategic-plan/2013/index.shtml 2013 IACC Summary of Advances in Autism Spectrum Disorder Research. (April 2014). http://iacc.hhs.gov/summary-advances/2013/index.shtml 2011-2012 IACC Autism Spectrum Disorder Research Portfolio Analysis Report. (in progress). http://iacc.hhs.gov/portfolio-analysis/2011-2012/index.shtml Autism Spectrum Disorder Research Portfolio Analysis Web Tool https://iacc.hhs.gov/apps/portfolio-analysis-web-tool/projects

Summary of Interagency Planning Documents	
Committee	**Planning documents**
Interagency Breast Cancer and Environmental Research Coordinating Committee Examine the current state of breast cancer and the environment research and make recommendations for eliminating knowledge gaps.	*Breast Cancer and the Environment: Prioritizing Prevention.* (2013) http://www.niehs.nih.gov/about/assets/docs/ibcercc_full_508.pdf
Interagency Pain Research Coordinating Committee Established under the Affordable Care Act (ACA) to: develop a summary of advances in pain care research supported or conducted by the Federal agencies; identify critical gaps in basic and clinical research on the symptoms and causes of pain; make recommendations to ensure that the activities of the NIH and other Federal agencies are free of unnecessary duplication of effort; make recommendations on how best to disseminate information on pain care; and make recommendations on how to expand partnerships between public entities and private entities to expand collaborative, cross-cutting research.	Office of Pain Policy, NINDS. 2011 IPRCC Federal Pain Research Portfolio Analysis Report. http://iprcc.nih.gov/portfolio_analysis/IPRCC-Pain-Research-Portfolio-Analysis-Report.htm *2012 - 2013 Science Advances in Pain Research.* http://iprcc.nih.gov/Science_Advances_in_Pain_Research/2012-2013ScienceAdvancesinPainResearch.htm Interagency Pain Research Portfolio database (AHRQ, CDC, DoD, FDA, NIH, and VA) http://paindatabase.nih.gov/
National Nanotechnology Initiative Coordinate Federal nanotechnology research and development. The NNI creates a framework for shared goals, priorities and strategies for each Federal agency to leverage the resources of all participating agencies.	*2014 NNI Strategic Plan.* (February 2014). http://www.nano.gov/node/1113 *2011 Environment, Health, and Safety Research Strategy.* (October 2011). http://www.nano.gov/node/681
Post-traumatic Stress Disorder/Traumatic Brain Injury Workgroup A 2012 White House Executive Order called for an increase in the HHS, DOD, and VA research commitments and collaborations to address the problems of post-traumatic stress disorder, traumatic brain injury, and suicide. Section 5 of this Executive Order requested a National Research Action Plan to provide a comprehensive approach to accelerating research on PTSD and TBI.	Departments of Defense, Veterans Affairs, Health and Human Services, and Education. (August 2013). *National Research Action Plan.* http://www.whitehouse.gov/sites/default/files/uploads/nrap_for_eo_on_mental_health_august_2013.pdf

Research Portfolio Databases

In addition to the strategic plans, portfolio analyses, and research advances, two interagency committees have developed online searchable databases of research projects within their purview. These tools allow searching for research projects by multiple fields, such as theme, project number, principal investigator, agency, year, and keyword.

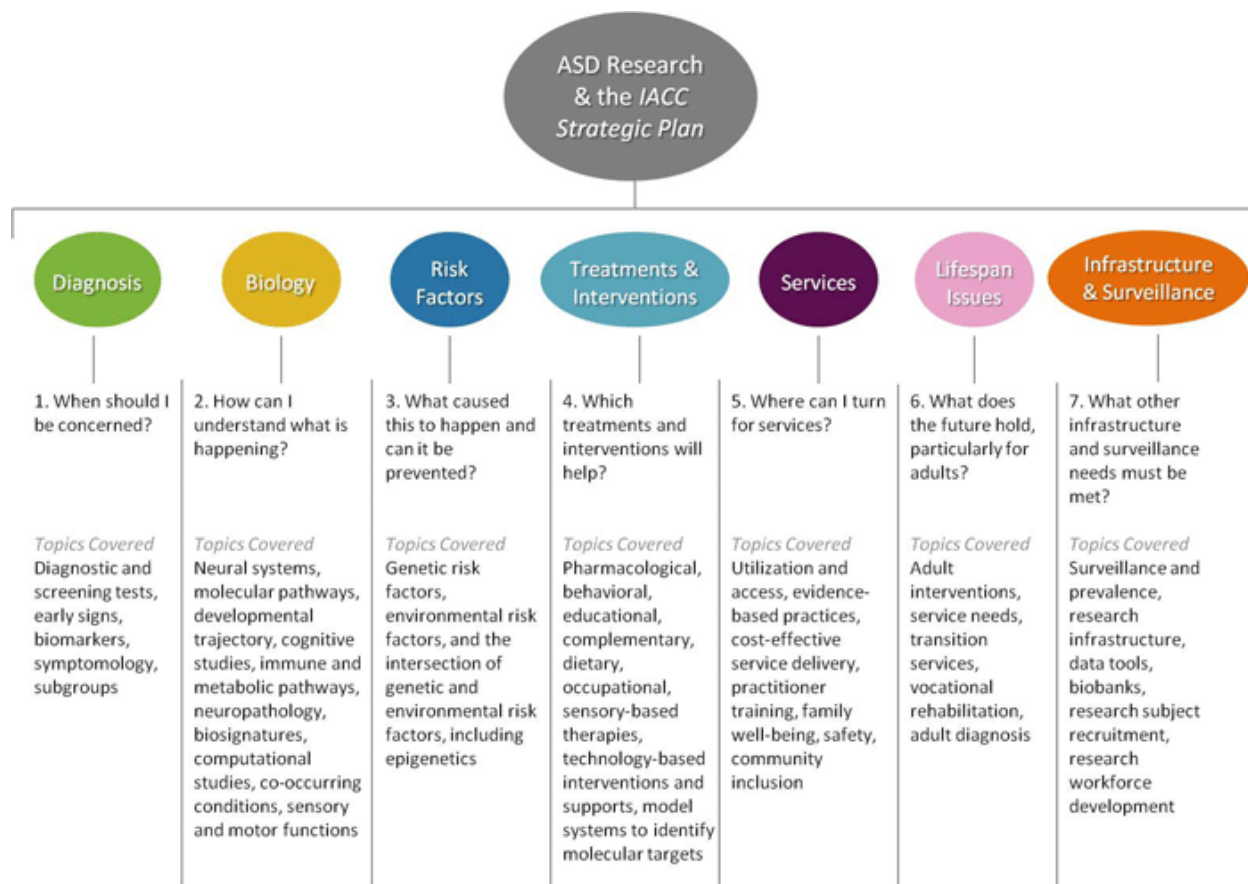**Autism Spectrum Disorder Research Portfolio Analysis Web Tool**

https://iacc.hhs.gov/apps/portfolio-analysis-web-tool/projects

The *IACC/OARC Autism Spectrum Disorder Research Portfolio Analysis Web Tool* is an online companion database to the *2008*, *2009*, and *2010 Autism Spectrum Disorder Research Portfolio Analysis Reports.* For each research project in the *2008*, *2009*, and *2010 Portfolio Analysis Reports*, all of the information collected to generate these reports is accessible in this online database. Data include project title, principal investigator, annual funding amount, *IACC Strategic Plan* Question and Objective codes, and project descriptions.

To create each *IACC Portfolio Analysis Report*, a comprehensive analysis of the autism spectrum disorder (ASD) research portfolio of major Federal agencies and private organizations is conducted for a given funding year. Each agency or organization is asked to provide a list of the research projects that they have funded in the funding year of interest, including the project title, the name of the principal investigator, a description of the research, and the amount of funding awarded that year.

Each project is assigned a "Question" code corresponding to one of seven key ASD research areas defined in the *IACC Strategic Plan for ASD Research*. Additionally, within each question, projects are assigned an "Objective" code corresponding to the specific research objectives in the *IACC Strategic Plan*, which represent gaps and research priorities identified by the committee.

Because the *Portfolio Analyses* examine the extent to which current funding and research topics align with the *IACC Strategic Plan*, they can be used by Federal agencies and private research organizations to help guide future funding priorities by outlining current gaps and opportunities in ASD research, as well as serving to highlight current activities and research progress.

In addition to mapping funded research projects to specific objectives in the *Strategic Plan*, all of the research projects in the *2010 IACC Portfolio Analysis* are assigned to a research "Subcategory." These subcategories provide a more detailed breakdown of research funding and also help identify the types of research addressed by projects that do not correspond to specific objectives of the *Strategic Plan*. This subcategory analysis is new to the *2010 Portfolio Analysis*; subcategories are not included in the 2008 and 2009 data. The figure below illustrates the seven key ASD research areas and questions into which each research project is assigned.

ASD Research & the *IACC* Strategic Plan

Diagnosis	Biology	Risk Factors	Treatments & Interventions	Services	Lifespan Issues	Infrastructure & Surveillance
1. When should I be concerned?	2. How can I understand what is happening?	3. What caused this to happen and can it be prevented?	4. Which treatments and interventions will help?	5. Where can I turn for services?	6. What does the future hold, particularly for adults?	7. What other infrastructure and surveillance needs must be met?
Topics Covered Diagnostic and screening tests, early signs, biomarkers, symptomology, subgroups	*Topics Covered* Neural systems, molecular pathways, developmental trajectory, cognitive studies, immune and metabolic pathways, neuropathology, biosignatures, computational studies, co-occurring conditions, sensory and motor functions	*Topics Covered* Genetic risk factors, environmental risk factors, and the intersection of genetic and environmental risk factors, including epigenetics	*Topics Covered* Pharmacological, behavioral, educational, complementary, dietary, occupational, sensory-based therapies, technology-based interventions and supports, model systems to identify molecular targets	*Topics Covered* Utilization and access, evidence-based practices, cost-effective service delivery, practitioner training, family well-being, safety, community inclusion	*Topics Covered* Adult interventions, service needs, transition services, vocational rehabilitation, adult diagnosis	*Topics Covered* Surveillance and prevalence, research infrastructure, data tools, biobanks, research subject recruitment, research workforce development

SOURCE: Interagency Autism Coordinating Committee (2012)

Interagency Pain Research Portfolio Database

http://paindatabase.nih.gov/

The Interagency Pain Research Portfolio database provides information on pain research and training activities supported by six Federal agencies: AHRQ, CDC, DoD, FDA, NIH, and VA. These agencies are represented on the Interagency Pain Research Coordinating Committee (IPRCC), a Federal advisory committee created by the Department of Health and Human Services to enhance pain research efforts and promote collaboration across the government, with the ultimate goals of advancing the fundamental understanding of pain and improving pain-related treatment strategies. The Committee is composed of seven Federal members and 12 non-Federal members, six drawn from the scientific and medical communities and six members of the public and stakeholder groups.

To develop the database and the associated report, a working group of the IPRCC and NIH staff defined primary and secondary tiers of scientifically relevant topic areas into which more than 1200 federally funded research projects were categorized. The Tier 1 categories are broad – basic, translational, and clinical research. The Tier 2 categories define 29 specific topic areas that are uniquely relevant to pain and meaningful to the broad range of agency missions and the needs recognized by the pain research community. Staff across the Federal agencies coded their projects according to these primary and

secondary categories and identified projects as relevant to specific pain conditions or groups of pain conditions.

The Tier 2 categories then were organized into 9 overarching research themes to present cohesive units of related projects: Pain Mechanisms, Basic to Clinical, Disparities, Training & Education, Tools & Instruments, Risk Factors & Causes, Surveillance & Human Trials, Overlapping Conditions, and Use of Services, Treatments, & Interventions. The database is managed by the Office of Pain Policy, National Institute of Neurological Disorders and Stroke, National Institutes of Health, under the auspices of the Interagency Pain Research Coordinating Committee.

Dissemination of Research Results

An often overlooked piece of interagency collaboration, disseminating the results of interagency planning and research to other Federal partners and to non-Federal stakeholders promotes further collaboration and can be valuable input for future research plans. Summarizing the scientific literature and making the summaries available to the stakeholder community informs policy decisions and helps researchers build on past efforts (Government Accountability Office, 2011).

Knowledge translation (KT) is the process of creating and moving research findings to real-world applications in a variety of practice settings and circumstances (Sudsawad, 2007). The ICDR expert panel noted that this KT-oriented process could inform future priorities and limit overlap (Interagency Committee on Disability Research Expert Panel, 2014). All interagency efforts are by definition multidisciplinary which requires reaching researchers and stakeholders in diverse disciplines. Techniques include websites, professional journals, presentations at scientific conferences, workshops, databases of ongoing and completed research projects, and virtual communities of practice. Dissemination to the public and interested non-Federal stakeholders is also relying increasingly on social media (Interagency Breast Cancer and Environmental Research Coordinating Committee, 2013).

The Enterprise Structure

The ICDR expert panel noted that sustaining collaborative activities as new areas of research emerge will require innovative approaches. One such innovative approach is the enterprise structure (Partnership for Public Service & Booz Allen Hamilton, 2013) which creates a culture of collaboration by building and leveraging social networks that cut across bureaucratic boundaries. For the Federal government to operate as an enterprise, it must integrate efforts to achieve cross-cutting goals, missions and functions that agencies cannot effectively achieve individually.

One way to utilize an enterprise structure, according to the panel, is to focus energies to attack one "wicked" problem. Wicked problems are those that require collaborating across agencies with interrelated responsibilities but competing and unaligned interests (Nickerson & Sanders, 2013). The panel suggested that ICDR could design a project carefully supported through a collaborative implementation process; devote sufficient resources into the process; invite people from agencies who strategically need to be involved; create visibility; and be successful. This enterprise approach would create a dominant coalition of Federal people who work in the disability area who begin to value interagency collaboration.

The panel also considered ways to lead without formal authority in a highly bureaucratic environment. Leading without formal authority involves finding the shared interests, and in the case of bureaucratic organizations, finding who has influence. In some cases, the person with influence may be the head of an organization, but sometimes it may be a change leader with informal influence whose advice and input is trusted and sought out and who is not always visible to organizational or industry leaders. These hidden influencers can be a source of best practices, new ideas, and collaborative solutions to organizational challenges (Duan, Sheeren, & Weiss, 2014).

Mapping social networks within the collaboration enterprise would be a way of determining whether, because of the collaboration, members are connected to more people and more investigators than they would be if they had not been active in the collaboration. Mapping the existing disability research network would identify influential enterprise leaders. The ICDR could then build upon the networks by creating and sustaining micro communities of people interested in a particular topic. This initiative could be further supported through an investment of funding in research in interagency collaboration and in social networking software to map research networks.

When committees begin to form research collaborations, the National Research Council (2011) found that "grassroots collaboration is preferred because it is based on technical necessity and a desire to work together . . . top-down collaboration will be burdened from the beginning with a lack of working-level buy-in. Successful collaboration is more likely when each agency considers the partnership one of its highest priorities; such an understanding should be codified in signed agreements that also document the terms of the collaboration's management and operations" (p. 38).

One effective technique for sustaining collaboration is to create horizontal connectivity which makes officials co-responsible for integrated projects. The Homeless Veterans Initiative Team is a model of shared leadership between the Department of Housing and Urban Development (HUD) and the Department of Veterans Affairs (VA). This initiative combines HUD vouchers for veterans to rent privately-owned housing, with VA case management services that include health care, mental health treatment, vocational assistance and job development. The team was credited with eliminating the

stovepipes that had prevented full cooperation between the VA and HUD (Partnership for Public Service, 2012).

Accountability in an enterprise structure is achieved by building it into performance appraisals. These appraisals would maintain the technical competencies, but also hold staff accountable for the collaboration skills on which they are trained. Some agencies have incorporated interagency group activities into individual performance expectations (Government Accountability Office, 2014b).

Committee Operations

Once an interagency committee has been established, the collaboration needs to operate efficiently in its day-to-day activities. The Federal Collaboration on Health Disparities Research, in which the ICDR is participating, identified general guiding principles for successful committee operations (Rashid et al., 2009):

- **Respect agency missions.** Maintain equitable agency representation on interagency committees to ensure that agency missions and priorities are recognized.

- **Create common language.** Develop a common language for cross-agency initiatives to help partnerships operate effectively.

- **Build on existing groups.** Network with other groups that focus on similar issues to minimize duplication and promote efficiency.

- **Address support needs as they arise.** Co-lead agencies need to work together to provide logistical support to maintain momentum and productive networking.

- **Provide infrastructure for collaboration.** Maintain participant engagement and success by providing the technical support.

- **Establish an identity.** A unique identity will increase recognition and understanding of the collaboration and how it relates to the work of others.

- **Overcome barriers.** Proactive efforts are needed to address and resolve new issues as they arise.

The National Research Council (2011) identified several specific characteristics that facilitate successful interagency collaborations, defined as achieving stated objectives and satisfying sponsor goals:

- **A small and achievable list of priorities.** Projects address a sharply focused set of priorities and have clear goals. Agreement is based on specific projects rather than general programs.

- **A clear process to make decisions and settle disputes.** Project decision making is driven by an intense focus on mission success. This is facilitated by formal agreement at the outset on explicitly defined agency roles and responsibilities and should involve agreed processes for making management decisions, single points of accountability (i.e., not committees), and defined escalation paths to resolve disputes. Long-term planning, including the identification of exit strategies, is undertaken at the outset of the project and includes consideration of events that might trigger a reduction-in-scope or cancellation review and associated fallback options if there are unexpected technical difficulties or large cost overruns that make the collaboration untenable.

- **Clear lines of authority and responsibility for the project.** Technical and organizational interfaces are simple and aligned with the roles, responsibilities, and relative priorities of each collaborating entity. Project roles and responsibilities are consistent with agency strengths and capabilities. Expert and stable project management has both the time and the resources available to manage the collaboration. Specific points of contact for each agency are identified. Agency and project leadership provides firm resistance to changes in scope. When possible, one of the collaborating agencies should be designated as the lead agency with ultimate responsibility and accountability for executing the mission within the agreed

set of roles and responsibilities, command structure, and dispute resolution process defined in a Memorandum of Understanding (MOU). In some cases the lead agency might change as a function of time, as missions differ between the implementation and operations phases.

- **Well-understood participation incentives for each agency and its primary stakeholders.** All parties share a common commitment to mission success and are confident in and rely on the relevant capabilities of each collaborating agency. Each agency understands how it benefits from the cooperation and recognizes that collaborative agreements may need to be revisited at regular intervals in response to budgetary and political changes. There is buy-in from political leadership (e.g., senior administration, Congress, and agency-level administrators), which can help projects move past the inevitable challenges. There is a general spirit of intellectual and technical commitment from the agency workforce and contractors to help projects mitigate the disruptive effects of technical and programmatic problems that are likely to occur. Early and frequent stakeholder involvement throughout the mission keeps all stakeholders informed, manages expectations, and provides appropriate external input.

- **Adequate funding and stakeholder support to complete the task.** Funding adequacy is based on technically credible cost estimates with explicitly stated confidence levels (pp. 36-37).

In addition to a Memorandum of Understanding, interagency collaborations should agree to an implementation plan that "establishes management authority, organizational responsibilities, integrated review plans, budgets, schedule, and priorities at the outset and explicitly spells out how conflicts over scarce resources are to be handled" (National Research Council, 2011, p. 37). Along with these formal agreements, collaborators must commit to "open, honest, effective, and complete communications" encompassing "all types of communication—written, oral, formal, and informal—from program and project plans, schedules, requirements, and contracts, to technical interchange meetings, interface control documents, MOUs, and configuration control boards, including telephone calls, e-mail, and on-site visits" (p. 38).

Other Collaboration Resources for ICDR Members

ICDR Collaborative Workspace

Team science is a collaborative and often cross-disciplinary approach to scientific inquiry that draws researchers who otherwise work independently or as co-investigators on smaller-scale projects into collaborative centers and groups (Bennett, Gadlin, & Levine-Finley, 2010). The ICDR Collaborative Workspace grew out of the ICDR push for more team science-type collaboration and encourages sharing of information and ideas. The Workspace is an interactive, interoperable electronic information management system which serves as a resource to promote interagency coordination, collaboration, and communication. The Workspace is the gateway to a wide array of information regarding disability and rehabilitation research activities, programs, and projects sponsored by Federal agencies across the government, and plans for such. There are partnership resources, including material describing the benefits of collaboration and partnerships, and a link to additional team science resources.

The Workspace is accessible only to Federal employees. A *Share Information* link allows members to submit a request for the ICDR to share input, ideas, postings, or requests. The ICDR uses a variety of approaches to disseminate information to promote interagency collaboration and coordination, such as:

- Post reports, presentations, notices, or other documents on the ICDR public website and/or this Collaborative Workspace site.

- Post information from agencies seeking to collaborate and identify partners for activities.

- Maintain a database for sharing and accessing MOU/IAAs in the Partnership Opportunities section of this Collaborative Workspace.

- Send email notices or requests to Federal ICDR participants, standing committee members and/or stakeholders outside the Federal government.

- Host discussion forums for Federal ICDR participants and other stakeholders on a particular disability or rehabilitation research topic.

- Establish work spaces for ad hoc work groups and committees to develop and complete or maintain on-going projects, and share information.

Sample Agreements

A formal agreement is an important aspect of formalizing a team science arrangement. The types of agencies involved, the requirements of collaborating parties, their relationship, and their goals will define the type and structure of the agreement (Resnik et al., 2013). When developing a Memorandum of Understanding (MOU) or Interagency Agreement (IAA), it is important to describe in specific terms the purpose, scope of work, expected outcome, and terms of agreement for the partnership. The ICDR has compiled sample MOUs and IAAs for use by its constituents who are considering establishing formal agreements for the conduct of joint research, programs, or other activities. Although agreements will be governed by the procedures in place for each agency, these sample documents illustrate the key elements and activities to consider when planning, developing, or implementing an MOU or IAA. These sample agreements are in the public domain and may be used for reference in creating similar agreements.

Log in to https://www.icdrteam.ed.gov to access the ICDR Collaborative Workspace and the sample agreements.

For information about becoming an authorized user, contact ICDRinfo@neweditions.net.

References

Bennett, L. M., Gadlin, H., & Levine-Finley, S. (2010). *Collaboration and team science: A field guide.* Rockville, MD: National Institutes of Health. Retrieved from http://teamscience.nih.gov.

Departments of Defense, Veterans Affairs, Health and Human Services, & Education. (2013). *National Research Action Plan*. Washington, DC: Authors. Retrieved from http://www.whitehouse.gov/sites/default/files/uploads/nrap_for_eo_on_mental_health_august_2013.pdf.

Diabetes Mellitus Interagency Coordinating Committee. (2011). *Advances and emerging opportunities in diabetes research: Strategic planning report of the Diabetes Mellitus Interagency Coordinating Committee*. Washington, DC: U.S. Department of Health and Human Services. Retrieved from http://www.niddk.nih.gov/about-niddk/strategic-plans-reports/Pages/advances-emerging-opportunities-in-diabetes-research.aspx.

Duan, L., Sheeren, E., & Weiss, L. M. (2014). Tapping the power of hidden influencers. *McKinsey Quarterly, 2014*(1). Retrieved from http://www.mckinsey.com/insights/organization/tapping_the_power_of_hidden_influencers

Government Accountability Office. (2005). *Results-oriented government: Practices that can help enhance and sustain collaboration among federal agencies (GAO-06-15)*. Washington, DC: Author. Retrieved from http://www.gao.gov/products/GAO-06-15.

Government Accountability Office. (2010). *Next generation air transportation system: FAA and NASA have improved human factors research coordination, but stronger leadership needed (GAO-10-824)*. Washington, DC: Author. Retrieved from http://www.gao.gov/products/GAO-10-824.

Government Accountability Office. (2011). *Federal oil and gas: Interagency committee needs to better coordinate research on oil pollution prevention and response (GAO-11-319)*. Washington, DC: Author. Retrieved from http://www.gao.gov/products/GAO-11-319.

Government Accountability Office. (2012). *Managing for results: Key considerations for implementing interagency collaborative mechanisms (GAO-12-1022)*. Washington, DC: Author. Retrieved from http://www.gao.gov/products/GAO-12-1022.

Government Accountability Office. (2014a). *2014 annual report: Additional opportunities to reduce fragmentation, overlap, and duplication and achieve other financial benefits (GAO-14-343SP)*. Washington, DC: Author. Retrieved from http://gao.gov/products/GAO-14-343SP.

Government Accountability Office. (2014b). *Managing for results: Implementation approaches used to enhance collaboration in interagency groups (GAO-14-220)*. Washington, DC: Author. Retrieved from http://www.gao.gov/products/GAO-14-220

Interagency Autism Coordinating Committee. (2012). *2010 IACC autism spectrum disorder research portfolio analysis report*. Washington, DC: U.S. Department of Health and Human Services. Retrieved from http://iacc.hhs.gov/portfolio-analysis/2010/index.shtml.

Interagency Autism Coordinating Committee. (2014a). *2013 IACC summary of advances in autism spectrum disorder research*. Retrieved from http://iacc.hhs.gov/summary-advances/2013/index.shtml.

Interagency Autism Coordinating Committee. (2014b). *IACC strategic plan for autism spectrum disorder (ASD) research–2013 update*. Washington, DC: Department of Health and Human Services. Retrieved from http://iacc.hhs.gov/strategic-plan/2013/index.shtml.

Interagency Breast Cancer and Environmental Research Coordinating Committee. (2013). *Breast cancer and the environment: Prioritizing prevention*. Washington, DC: Author. Retrieved from http://www.niehs.nih.gov/about/boards/ibcercc/index.cfm.

Interagency Committee on Disability Research Expert Panel. (2014). *Creating a sustainable interagency coordinating network on disability research*. Washington, DC: Author.

Interagency Pain Research Coordination Committee. (2013). *2012-2013 science advances in pain research*. Washington, DC: U.S. Department of Health and Human Services. Retrieved from http://iprcc.nih.gov/Science_Advances_in_Pain_Research/2012-2013ScienceAdvancesinPainResearch.htm.

Kaiser, F. M. (2011). *Interagency collaborative arrangements and activities: Types, rationales, considerations*. Washington, DC: Congressional Research Service.

Minkler, M., & Wallerstein, N. E. (2008). *Community-based participatory research for health: From process to outcomes (2nd ed.).* San Francisco: Jossey-Bass.

National Research Council. (2009). *Review of federal strategy for nanotechnology-related environmental, health, and safety research*. Washington, DC: National Academies Press. Retrieved from http://www.nap.edu/catalog.php?record_id=12559.

National Research Council. (2011). *Assessment of impediments to interagency collaboration on space and earth science missions*. Washington, DC: The National Academies Press.

Nickerson, J., & Sanders, R. E. (Eds.). (2013). *Tackling wicked government problems: A practical guide for developing enterprise leaders*. Washington, DC: Brookings Institution Press.

Partnership for Public Service. (2012). 2012 Citizen Services Medal Recipient. Retrieved from http://servicetoamericamedals.org/SAM/recipients/profiles/csm12_angell-johnston.shtml

Partnership for Public Service, & Booz Allen Hamilton. (2013). *Building the enterprise: Nine strategies for a more integrated, effective government.* Washington, DC: Authors. Retrieved from http://ourpublicservice.org/OPS/publications/viewcontentdetails.php?id=228.

Rashid, J. R., Spengler, R. F., Wagner, R. M., Melanson, C., Skillen, E. L., Mays Jr, R. A., . . . Long, J. A. (2009). Eliminating health disparities through transdisciplinary research, cross-agency collaboration, and public participation. *American Journal of Public Health, 99*(11), 1955–1961.

Resnik, L., Reiber, G. E., Staeger, P., Evans, R. K., Barnabe, K., & Hayman, K. (2013). *VA/DoD collaboration guidebook for healthcare research 2013.* Washington, DC: U.S. Department of Veterans Affairs. Retrieved from http://www.research.va.gov/va-dod/#.UZ4ntJz-Ics.

Sudsawad, P. (2007). *Knowledge translation: Introduction to models, strategies, and measures*. Austin, TX: Southwest Educational Development Laboratory, National Center for the Dissemination of Disability Research.

Workforce Innovation and Opportunity Act, Pub. L. No. 113-128 (2014).