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NATIONAL INSTITUTE ON DISABILITY
AND REHABILITATION RESEARCH

NIDRR

Long-Range Plan 1999-2003

Executive Summary

National Institute on Disability And Rehabilitation Research

Office of Special Education and Rehabilitative Services
National Institute on Disability and Rehabilitation Research

U.S. Department of Education

<http://www.ed.gov/offices/OSERS/NIDRR>

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EXECUTIVE SUMMARY

Introduction

The National Institute on Disability and Rehabilitation Research's (NIDRR) *Long-Range Plan* presents a five-year agenda to advance the vital work being done in applied rehabilitation research. This *Long-Range Plan* fulfills NIDRR's obligation under the Rehabilitation Act to provide a plan that identifies research needs and sets research priorities for the disability field. This plan is intended to balance the competing demands of consumer relevance and scientific rigor, to present an agenda that is scientifically sound and accountable, and to contribute to the refinement of the nation's science and technology policy. This *Executive Summary* describes the purpose and scope of the *Long-Range Plan*, which was published in the *Federal Register* on December 7, 1999 (64 FR 68575-68614).

NIDRR's plan serves the following purposes:

- to set broad general directions that will guide NIDRR's policies and use of resources as the field of disability prepares for the 21st century;
- to establish objectives for research and dissemination that will improve the lives of individuals with disabilities and from which annual research priorities can be formulated;
- to describe a system for operationalizing the plan in terms of annual priorities, evaluation of the implementation of the plan, and updates of the plan as necessary; and
- to direct new emphasis to the management and administration of the research endeavor.

The *Long-Range Plan* was developed with the guidance of a distinguished group of NIDRR constituents—individuals with disabilities and their family members and advocates, service providers, researchers, educators, administrators, and policy-makers. The plan draws upon public hearings and planning activities conducted by NIDRR, as well as papers prepared specifically for the plan by several authors.

The plan also addresses a range of diverse objectives intended to meet the following needs of the rehabilitation community:

- the needs of individuals with disabilities for knowledge and information that will enable them to achieve their aspirations for self-direction, independence, inclusion, and functional competence;
- the needs of rehabilitation service providers for information on new techniques and technologies that will enable them to assist in the rehabilitation of individuals with disabilities;
- the needs of researchers to advance the capabilities of science as well as the body of scientific knowledge;
- the needs of society and its leadership for strategies that will facilitate the potential contributions of all citizens; and
- the need to transfer findings from basic to applied research.

Since Congress created NIDRR in 1978, rehabilitation researchers have achieved many significant outcomes that benefit both the individual and society. For example, at the individual level, the concerted efforts of U.S. researchers, most of whom received NIDRR support, have decreased medical complications for individuals with spinal cord injuries, thus significantly increasing their life expectancy. In addition, rehabilitation engineering research has led to the use of new materials for wheelchairs and for orthotic and prosthetic devices, making this essential equipment more comfortable, functional, and attractive.

At the environmental-societal level, technology has greatly enhanced accommodations for people with all types of disabilities. Research has led to new applications of the principles of universal design to the built environment, information technology, telecommunications, transportation, and mass-market consumer products. These advances, which allow more people with disabilities to access buildings, telecommunications devices, and computer technology, illustrate a significant change in the disability paradigm—a change that expands the focus of disability to include environmental factors, as well as individual factors.

New Paradigm of Disability

NIDRR has provided leadership in research that has introduced a new conceptual foundation for organizing and interpreting the phenomenon of

disability—a new paradigm of disability. The paradigm provides a way to apply scientific research to help people with disabilities achieve their goals and address their concerns. This disability paradigm, which undergirds NIDRR’s future research strategy, maintains that disability is a product of an interaction between characteristics of an individual (e.g., conditions and impairments, functional status, or personal and socioeconomic qualities) and characteristics of the natural, built, cultural, and social environments. The new paradigm is integrative and holistic, focusing on the whole person functioning in his or her environment. The paradigm recognizes the contextual aspect of disability—the dynamic interaction between individual and environment. Conversely, the old paradigm, which the new paradigm replaces, presented disability as the result of a deficit(s) in an individual that prevented the individual from performing certain functions or activities.

The new paradigm has significant implications for NIDRR’s research agenda during the next decade. Examples include:

- changes in the way disability is defined and conceptualized;
- new approaches for measuring and counting disability, including changes in the methods for conducting demographic studies and national surveys to reflect the new definitions or concepts;
- changes in the focus of research, such as studies of the dynamic interplay between an individual and the environment and of the adapting process by the society and the individual; and
- changes in the way research is managed and conducted.

Research also must focus on the development and evaluation of environmental options in the built environment and the communications environment. Additionally, researchers need to address critical concerns that affect people with a wide range of disabilities. These factors include general fiscal and economic policy issues as well as specific policies on employment, the delivery and financing of health care, income support, transportation, social services, telecommunications, institutionalization, education, and long-term care.

The Emerging Universe of Disability

The frequency and widespread dispersion of disabilities among members of the U.S. population reinforce the need for disability research. According to estimates, 4 million people need help simply to live, while 40 million report

some kind of activity limitation. Disability also is distributed differently in the population according to characteristics of age, gender, race and ethnicity, and both the region and size of the locality in which a person resides. Poverty is a key factor—as a contributing cause and a result of disability. People with disabilities tend to have lower-than-average education levels, low income levels, and high unemployment rates.

For future research, NIDRR has started focusing on an *emerging universe* of disability, in which either the conditions associated with disabilities, their distribution in the population, or their causes and consequences are substantially different from those in the traditional disability population. The emerging universe is characterized by new disabling conditions; new causes for impairments; differential distribution within the population; increased frequency of some impairments, including those associated with the aging of the population; and different consequences of disability, particularly as related to social-environmental factors, life-span issues, and projected demands for services and supports.

Research Agenda for NIDRR

This *Long-Range Plan*, which aims to maximize independence and participation in society by people with disabilities, addresses priorities in five major research areas: employment outcomes, health and function, technology for access and function, independent living and community integration, and associated disability research areas. The plan also addresses priorities in three significant, related areas: knowledge dissemination and utilization, capacity-building for rehabilitation research, and research management.

Employment Outcomes

Two-thirds of working-age people with disabilities are not in the labor force, and those who are employed continue to earn less than their colleagues without disabilities. Reluctance to participate in the labor force often stems from disincentives inherent in social and health insurance policies, from discouragement, and from lack of physical access to jobs. Several other factors affect employment, including economy and labor force issues; the appropriateness and adequacy of the strategies and tools for vocational rehabilitation assessment, counseling, and training; the operation of community-based rehabilitation programs; employer roles and workplace supports; and the transition from school to work.

NIDRR's employment-related research agenda for the next five years will address these issues. The new research agenda will extend beyond previous

research efforts to investigate mechanisms that make the labor market more amenable to full employment for people with disabilities. To address the employment needs of people with disabilities, this research agenda also incorporates economic research, service delivery research, and policy research. Most important, the agenda relates to the context in which employment outcomes are determined.

The purposes of NIDRR's research in the area of employment are as follows:

- assess the impact of economic policy and labor market trends on the employment outcomes of people with disabilities;
- improve the effectiveness of community-based employment service programs;
- improve the effectiveness of state employment service systems;
- evaluate the contribution of employer practices and workplace supports to the employment outcomes of people with disabilities; and
- improve school-to-work transition outcomes.

Health and Function

To maintain their independence, individuals with disabilities must be able to maximize their health and function through health care, rehabilitation, and wellness regimens. Health care for people with disabilities encompasses access to care for routine health problems, participation in health promotion and wellness activities, and access to appropriate specialty care, including medical rehabilitation. Medical rehabilitation is the systematic application of modalities, therapies, and techniques to restore, improve, or replace impaired human functioning. It also includes biomedical engineering principles and techniques to improve the functional ability of people with disabilities.

NIDRR is committed to supporting research to improve the overall health and function of people with disabilities. The purposes of NIDRR's research in the area of health care and medical rehabilitation are as follows:

- identify and evaluate effective models of health care for people with disabilities;
- develop models to promote health and wellness for people with disabilities;

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- examine the impact of changes in the health care delivery system on access to care;
 - evaluate medical rehabilitation interventions that maximize function for individuals with disabilities;
 - develop strategies to help disabled individuals avoid secondary conditions;
 - assess delivery of medical rehabilitation services to people with disabilities; and
 - evaluate the health and medical rehabilitation needs of people whose impairments are attributed to newly recognized causes or whose conditions are newly recognized as disabilities (e.g., disabilities resulting from interpersonal violence or emergent chronic diseases such as childhood asthma or chronic fatigue immune deficiency syndrome).

Technology for Access and Function

Today, technology plays a vital role in the lives of millions of disabled and older Americans. Federal funds have supported research, development, and training in rehabilitation and biomedical engineering. Useful products have resulted from this research and development activity. These innovations enable people with significant disabilities to achieve and maintain maximum physical function, to live in their own homes, to study and learn, to attain gainful employment, and to participate in and contribute to society in meaningful and resourceful ways.

In planning the future of rehabilitation engineering research, NIDRR and its constituents in the consumer, service, research, and business communities will continue to identify flexible strategies to address emerging issues and technologies, to promote widespread use of research findings, and to maximize the impact of NIDRR programs on the lives of people with disabilities. Research in technology involves issues related to the built environment, information technology and telecommunications, consumer products, and transportation. These technological systems are basic to community integration, education, employment, health, and economic development. Additionally, research in technology must continue to improve the functional capacities of individuals with sensory, mobility, manipulation, and cognitive impairments. The purposes of NIDRR's research in the area of technology are as follows:

- develop assistive technology that supports people with disabilities to function and live independently and obtain better employment outcomes;
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- develop biomedical engineering innovations to improve function for people with disabilities;
 - promote the concept and application of universal design;
 - improve access to the built environment;
 - expand access to telecommunications and information technology;
 - ensure the transfer of technological developments to other research sectors, to production, and to the marketplace;
 - identify business incentives for manufacturers and distributors;
 - identify the best methods of making technology available to people with disabilities;
 - ensure that research and development at both the personal and systems levels take into account cultural relevance for diverse ethnic and geographic populations;
 - develop rehabilitation engineering science, including a theoretical framework to advance empirical research; and
 - raise the visibility of engineering and technological research for people with disabilities as a means of increasing attention to these research areas in national science and technology policy.

Independent Living and Community Integration

NIDRR proposes the continued development of a knowledge base about the meaning and application of independent living and community integration concepts. The concept of independent living recognizes that each individual has the right to exercise maximal control over his or her life, based on the opportunity to make choices in performing everyday activities. Although independent living emphasizes maximal attainable independence, whatever the setting, it is also a concept that promotes participation, especially participation in community settings. For this reason, NIDRR is integrating research agendas in community integration and independent living to encourage interdisciplinary thinking about the commonalities, to achieve successful outcomes for people with disabilities, and to foster the development of innovative methods to achieve these outcomes and to measure the achievements.

NIDRR’s framework for formulating this research agenda recognizes that the term independent living has been used to describe (a) a philosophy—of equity in the right to participate in society, (b) a movement—of people with disabilities who successfully used a civil rights approach to achieve equal access, and (c) a service program—whereby more than 300 centers for independent living foster and enhance independent living for people with disabilities.

Community integration also has conceptual, movement, and service delivery components. As a concept, it incorporates ideas of living in a community setting, as opposed to an institution, and participating in community activities. Issues of consumer direction and control are integral to community integration. As a movement, one of the goals of community integration has been to deinstitutionalize people with mental retardation or mental illness. This effort was successful in moving many individuals from large institutions into the community. At the service system level, community integration has resulted in the development or expansion of a range of services and programs to support people with disabilities to live in their own communities. NIDRR will work toward the continued development of a knowledge base about the meaning and application of independent living and community integration.

The purpose of NIDRR’s research in independent living and community integration is to enable people with disabilities to participate in society by doing the following:

- identifying and evaluating factors or domains of community integration and independent living, especially those aspects that lead to full participation in society;
- identifying and evaluating community support models that promote community integration and independent living outcomes for individuals with all types of disabilities and from a full range of cultural backgrounds;
- providing empirical evidence of the effects of consumer control on outcomes associated with community integration and independent living;
- assessing the impact of environmental factors on individual achievement of community integration and independent living;
- developing and disseminating training on independent living and community integration concepts and methods for consumers, families, service providers, and advocates; and

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- developing and evaluating management tools to enable centers for independent living and other community-based programs to support independent living and community integration.

Associated Disability Research Areas

Several important issue areas—disability statistics, disability outcomes measures, disability studies, rehabilitation science, and disability policy research—are integral to the successful completion of a comprehensive agenda in disability and rehabilitation research. The objectives of NIDRR’s research in these associated disability research areas are to create basic knowledge and to support broader research endeavors.

Disability Statistics. NIDRR believes that data about the incidence, prevalence, the distribution of disabilities, and the characteristics and experiences of disabled people are critical to planning research and services, evaluating programs, and formulating public policy. NIDRR has several purposes in advancing work in disability statistics. First, NIDRR believes it is important to maximize the usefulness of data currently collected in reliable national data sets. Second, NIDRR encourages the creation and analysis of research databases, including meta-analyses focused on problems such as employment rates or utilization of health care or social services. Third, NIDRR seeks to understand the composition of a possible emerging universe of disability created by new disabilities or socioeconomic variations in the distribution of existing disabilities. Fourth, NIDRR wants to help provide input to the formulation of a national disability statistics policy, including the incorporation of measures that reflect the new paradigm of disability. Finally, NIDRR recognizes the need for surveys to be conducted in accessible formats, and for disability demographic and statistical data to be readily available to a wide range of audiences.

Disability Outcome Measures. Another essential component of NIDRR’s research agenda is evaluation. The importance of demonstrating outcomes across service settings, programs, and research efforts cannot be over-emphasized, given resource allocation issues and concerns about values that operate at every level of society. NIDRR continues its interest in medical rehabilitation outcomes, an area that has significant experience in measuring outcomes; medical groups have developed and integrated various measures into their service delivery and research settings. Many of these measures, however, have not been validated across disability groups. NIDRR would like to see measures developed for hospital settings revised for use in post-acute programs or in community settings. Additionally, the increasing focus on long-term care outcomes requires measures that can document changes over

time. Moreover, NIDRR also will support investigations to identify and develop evaluation methodologies and outcomes measurement models for consumer assessments of assistive devices. Finally, NIDRR will support research that incorporates measures of environment and accommodation, which are critical to the continued implementation of the new paradigm of disability. And distinctly related to medical outcome measures are indicators of the quality of life. A particular challenge in developing these measures is the difficulty in comparing individual perceptions of the quality of life.

Disability Studies. NIDRR uses the term *disability studies* generally to refer to the holistic study of the phenomenon of disability through a multidisciplinary approach. This approach emphasizes the perspectives of people with disabilities and regards personal experience as valuable data. NIDRR believes that disability studies is a natural complement to the new paradigm, focusing on the study of the complex relationship between various aspects of disability and society. These disciplines include, among others, architecture, economics, history, law, literature, political science, religion, and urban planning.

NIDRR has three basic purposes for supporting a program of disability studies. First, disability and rehabilitation research needs a body of knowledge that is comprehensive and holistic, reflecting a range of disability perspectives, plus a larger cadre of researchers and policy-makers who are familiar with that knowledge base. Second, disability and rehabilitation research needs to develop methodologies and influence the theories and practices of a range of disciplines. The study of disability will enhance the methodologies and knowledge base of each discipline involved in the disability studies framework, thereby enhancing the scientific endeavor. Third, consistent with the goals of the Rehabilitation Act, NIDRR believes it is essential to reflect the perspectives of individuals with disabilities in studies of disability.

Rehabilitation Science. An important focus of NIDRR's research agenda is to find opportunities to construct and test a theoretical framework for rehabilitation science. Rehabilitation science is the study of the processes by which disability develops and the factors that influence those processes. The field of rehabilitation has produced a body of empirical evidence regarding function and interventions to improve function. The next challenge is to use this evidence to produce a body of scientific and engineering theory that can be used to develop innovative and improved techniques of functional restoration.

Disability Policy Research. Public policy has more significance for people with disabilities and their families than for many segments of the population.

This increased interest stems, in part, from the fact that people with disabilities must interface with so many different components of public policy systems, many of which are conflicting or inconsistent. Disability policy research will examine national issues that represent intersections of public interest. Such research will use national data sets, where possible, to determine the affects of policy decisions on people with disabilities.

Knowledge Dissemination and Utilization

The effective dissemination and use of disability and rehabilitation research are critical components of NIDRR's mission. Research findings can improve the quality of life of people with disabilities and advance their full inclusion into society. These benefits are feasible only if the findings are accessible and understandable to all constituencies: research scientists, people with disabilities, their families, service providers, policy-makers, educators, human resource developers, advocates, entities covered by the ADA, and others. NIDRR's challenges include reaching diverse and changing populations, presenting research results in many different and accessible formats, and using communication technology effectively. This requires taking into account the changing environment for dissemination and utilization, which is affected by technological innovation, the changing etiology of disability, and an increased emphasis on the individual's interaction with the physical and social universe.

Future dissemination and utilization strategies will build upon successful past strategies, such as archives, newsletters, and best-practice reports. These strategies will capitalize on the potential of electronic media and other telecommunications innovations for linked and searchable Web sites, listservs, and computer chats. To enhance the dissemination and utilization of research, NIDRR will carry out a number of significant activities. These will include establishing a national information center, creating databases, developing consumer partnerships, providing specialized assistance to grantees, using electronic media and telecommunications to reach more information users, targeting new audiences, and evaluating dissemination methods.

Capacity-Building for Research and Training

NIDRR's capacity-building is multidimensional and involves training those who participate in all aspects of the disability research field, including scientists, service providers, and consumers. NIDRR's principal statutory mandate for training is to support advanced instruction for researchers and service providers. NIDRR also has an implied mandate, strengthened in the

1992 Rehabilitation Act amendments, to train consumers to apply new research knowledge and to use assistive technology. To advance the disability and rehabilitation research field, NIDRR will expand the scope of its capacity-building activities as follows:

- raise the level of rigorous qualitative and quantitative research and increase the use of state-of-the-art methodologies by providing advanced training in disability-related research for scientists, including those with disabilities and those from minority backgrounds;
- develop the capacity of researchers to conduct research that explains disability as a contextual phenomenon;
- prepare researchers to conduct disability studies that are holistic, interdisciplinary, and cognizant of the cultural context of disability;
- develop the capacity of researchers to conduct studies in new settings (e.g., homes, workplaces, schools, recreational facilities, community-based organizations);
- train rehabilitation practitioners in the application of research-generated knowledge and new techniques; and
- train consumers, family members, and advocates in the use of research findings, in part to facilitate participatory research.

Enhancing NIDRR's Management of Research

The research endeavor benefits from thoughtful management practices specifically tailored to enhance relevance, importance, scientific quality, coordination, participation, flexibility, productivity, and communication. This plan addresses a number of strategies to reinforce the impact and significance of the research program. These include an emphasis on Centers of Excellence; coordination of federal disability research through the Interagency Committee on Disability Research (ICDR); evaluation and performance reviews; an enhanced peer review process; expanded use of information technology; international research; promotion of collaborative research; and continuous participatory planning.

Centers of Excellence and Program Review. NIDRR is committed to regenerating its Centers of Excellence concept in disability and rehabilitation research. Recognizing that Centers of Excellence result from a partnership between NIDRR and its grantees, NIDRR has worked with grantees to refine

a Centers of Excellence model that delineates the standards of excellence. These standards are grouped into four categories: excellence in administration, excellence in scientific research, excellence in relevance and productivity, and excellence in capacity-building. NIDRR will continue to promote this model through its program reviews, technical assistance, and educational activities.

NIDRR will continue to hold in-depth program reviews for all centers and model systems, with each center receiving a formative review after one year of operation and a summative review in its last year. Program reviews afford opportunities for NIDRR's broad constituency to critique its centers and to provide valuable input. These reviews have succeeded in increasing attention to quality and accountability.

Coordination of Federal Disability Research. NIDRR promotes coordination and collaboration within the federal government through the Interagency Committee on Disability Research (ICDR). Over the next five years, there will be an added emphasis on strengthening the foundation for disability research through capacity-building, improving disability statistics, enhancing tools and methods of disability studies and rehabilitation science, and drawing attention to disability issues in the nation's science and technology policy.

Peer Review Process. With guidance taken from the *Long-Range Plan*, as well as that suggested in the Institute of Medicine's recent review, NIDRR implemented standing panels in its field-initiated competition in 1999. This approach promises to provide more consistent feedback to applicants and to raise the accepted level of research excellence. NIDRR will monitor the new process closely and will provide feedback to all constituents on the apparent strengths and weaknesses of the new process, as well as needed modifications.

International Research and Related Activities. NIDRR's international program has long included capacity-building strategies, such as an exchange of experts, technical assistance, and conferences. As the world becomes ever more a global economy, however, an international perspective on technology is vital, especially information technology, service delivery, and product standards. NIDRR's concept of the *emerging universe of disability* recognizes the cultural, linguistic, economic, and geographic components of disability that are exemplified and addressed in international research, education, and technical assistance. Telecommunications, especially distance learning and telerehabilitation, both necessitate and facilitate a worldwide perspective.

Continuous Participatory Planning. NIDRR will continue to involve its constituents and its staff in implementing and evaluating the *Long-Range Plan*, as well as in developing future plans. The full implementation of the plan will require a concerted effort and attention to funding priorities, dissemination, training, and education. NIDRR plans to continue an open dialogue with individuals with disabilities and their families, researchers, service providers, policy-makers, and industry representatives to assess the success of this plan and set directions for the future.

Conclusion

NIDRR's *Long-Range Plan* presents a comprehensive research agenda, focusing on developing new methods, technologies, and approaches for eliminating the environmental, cultural, and social barriers that prevent people with disabilities from full inclusion in all aspects of society. NIDRR intends for this plan to challenge the disability and rehabilitation community to address the new paradigm of disability and its implications for their lives and work. Sensitivity to the environmental components of disability leads to an awareness of a changing disability universe, which results from both new conditions and etiologies and from the differential distribution of disabilities among socioeconomic and cultural groups.

The new paradigm calls for an emphasis on an accessible society and participation by individuals with disabilities. This plan presented in this document also supports the concept of universal design as a way to facilitate access and enhance or replace the use of many individualized accommodations. NIDRR believes these concepts and approaches will enable the disability field to capitalize on the opportunities presented by the convergence of technological breakthroughs and the empowerment of disabled advocates.

This plan outlines new management strategies to oversee NIDRR's extensive, multifaceted rehabilitation research effort. Using a five-year agenda, NIDRR will provide a blueprint for advancing knowledge in medical and rehabilitation service delivery, assistive technologies, employment, statistical methods and survey research, disability studies and rehabilitation science, and approaches to independent living and community integration. By creating avenues for the dissemination and utilization of research knowledge and by enhancing research capacity and management talent, NIDRR stands as an agency for change, promoting the advancement of individuals with disabilities.

Appendix *Long-Range Plan* Steering Committee Members

Clifford Brubaker (chair) is the dean of the School of Health and Rehabilitation Sciences at the University of Pittsburgh. Prior to this position, he was a professor at the University of Virginia for 18 years. He is a nationally known researcher in seating and mobility and a leader in assistive technology and rehabilitation engineering. He is a founding member of the Rehabilitation and Assistive Technology Association (RESNA) and served as its president in 1993–94. He has received patents for several inventions. Brubaker holds a Ph.D. in exercise physiology.

Robert H. Bruininks is the executive vice president and provost of the University of Minnesota and a professor of educational psychology. He has long-standing interests in educational evaluation and accountability, school-linked services, and strategic planning and educational reform. He established The Institute on Community Integration, a university-affiliated program on developmental disabilities, in 1985 to provide interdisciplinary training, exemplary services, and information and applied research on behalf of people with developmental disabilities and their families. Bruininks holds a Ph.D. in educational psychology.

Ricardo R. Fernández is president of Herbert H. Lehman College, a four-year liberal arts college of The City University of New York. He has held academic and administrative positions at Marquette University and the University of Wisconsin-Milwaukee, and served as a Fellow of the American Council on Education. His research interests include educational equity and the recruitment, retention, and advancement of minority students, faculty, and academic staff in higher education. Fernández holds a Ph.D. in romance languages from Princeton University.

James Paul Firman is president and CEO of the National Council on the Aging Inc. Firman's previous positions include president of the United Seniors Health Cooperative and senior program officer at the Robert Wood Johnson Foundation. He is a widely recognized expert and consumer advocate on many issues affecting older persons, such as home care, long-term care, health insurance and financing issues, and intergenerational programs. Firman has an Ed.D. in education from Columbia University.

Harley E. Flack (deceased) was the president of Wright State University. Flack was previously provost and executive vice president at Rowan College of New Jersey and vice president for academic affairs and dean of the faculty at the State

University of New York at Old Westbury. From 1974-87, Flack served as the founding dean and professor of the college of Allied Health Sciences at Howard University. He also served as a strategic planning consultant for more than 25 institutions in the United States. Flack was president of the National Society of Allied Health and held a Ph.D. in counselor education from the State University of New York at Buffalo.

Donald E. Galvin is president and CEO of the Commission on Accreditation of Rehabilitation Facilities, the preeminent standards-setting and accrediting body promoting quality services for people with disabilities. From 1989–93, Galvin was the vice president for programs of the Washington Business Group on Health and director of the Institute for Rehabilitation and Disability Management. He was associate superintendent of education for the Michigan Department of Education and also served as the director of its Bureau of Rehabilitation Services. Galvin has a Ph.D. in counseling and guidance.

Murray Goldstein is the medical director of the United Cerebral Palsy Research and Educational Foundation and is the interim executive director of the United Cerebral Palsy Associations of the United States. He was formerly the director of the National Institute of Neurological Disorders and Stroke of the National Institutes of Health and assistant surgeon general in the United States Public Health Service. Dr. Goldstein is recognized internationally as a leader in the clinical, scientific, and science administration aspects of disorders of the nervous system.

Joseph G. Hollowell, Jr., M.D., is the medical chief of the Office of Disability and Health at the Centers for Disease Control and Prevention. He is the former chief of the Developmental Disabilities Branch of the Division of Birth Defects and Developmental Disabilities. He is board-certified in pediatrics and has a master's in Public Health from the University of California-Berkeley. He is a nationally recognized expert on low-birthweight infants and children with disabilities. His professional interests include the study of growth in children, pediatric endocrinology, and issues surrounding the definitions, understanding, and prevention of disabilities.

James R. Knickman is vice president at The Robert Wood Johnson Foundation, a national philanthropy that awards grants focusing on efforts to improve the health and health care of Americans. Knickman directs grantmaking programs in health policy research, evaluation of innovations related to health care delivery and health promotion, and care received by the chronically ill. Prior to joining the foundation, Knickman was a professor of Health Administration at New York University's Robert F. Wagner Graduate School of Public Service. Currently, he serves on the Board of Trustees of the Robert Wood Johnson University Hospital.

Knickman received his Ph.D. in public policy analysis from the University of Pennsylvania.

Simi Litvak is director of the Research and Training Center on Personal Assistance Services at the World Institute on Disability (WID) in Oakland, Calif. Formerly the research director of the Research and Training Center on Public Policy in Independent Living at WID, Litvak is a nationally known expert in independent living and personal assistance. She has 30 years of experience in the disability field as a teacher, researcher, policy analyst, policy-maker, and rehabilitation professional. Most recently she served as a member of the President's Health Care Reform Task Force. Litvak holds a master's degree and a Ph.D. in studies in behavioral disabilities from the University of Wisconsin-Madison.

Ronald L. Mace (deceased) was a nationally recognized architect and product designer. He was president of Barrier Free Environments Inc. in Raleigh, N.C., a firm that specializes in design for disabled and older people. He also was director of the Center for Universal Design at the School of Design at North Carolina State University. He was elected to the College of Fellows for the American Institute of Architects for his contribution to the profession in promoting accessible and universal design. He had received numerous awards, including the Distinguished Service Award of the president of the United States for long-term contributions to furthering the rights and independence of people with disabilities.

Audrey L. McCrimon is the assistant secretary of the Illinois Department of Human Services. As the assistant secretary, McCrimon directs the agency's core training strategies, customer service and provider assistance, and Americans with Disabilities Act activities. Prior to becoming assistant secretary, McCrimon had been the director of the Illinois Department of Rehabilitation Services, an agency serving 200,000 state residents with disabilities. Before joining the state government, McCrimon served as deputy commissioner on disability for the Chicago Department on Aging and Disability and was nominated by the President in 1994 to serve on the National Council on Disability. McCrimon holds a master's degree in education from Northern Illinois University.

Lawrence A. Scadden is senior program director for the National Science Foundation's Program for Persons with Disabilities. Previously, Scadden served as director of Technology Application Programs for the Electronic Industries Foundation. He served as the first deputy director of the National Institute on Disability and Rehabilitation Research. Scadden is a nationally known expert on technology applications for people with disabilities and the design of accessible mass market electronic products. Scadden holds a master's degree in

experimental psychology and a Ph.D. in visual sciences from the University of the Pacific.

Max J. Starkloff is the founder and president of Paraquad Inc. Starkloff was co-founder and elected president of the National Council of Independent Living from 1983–85. He was appointed to the president’s Commission on White House Fellowships by the President in 1993. Mr. Starkloff is an internationally recognized leader in independent living and has received acclaim from several humanitarian groups.

Samuel L. Stover, M.D., served as medical director of the Spain Rehabilitation Center, project director for the Research and Training Center on Spinal Cord Injury, and director of the National Spinal Cord Injury Statistical Center. Dr. Stover is past president of the American Spinal Cord Injury Association. In June 1994, he retired as chairman of the Department of Rehabilitation Medicine and was named Professor Emeritus. He is a nationally recognized expert in urologic management of persons with spinal cord injury, and skin and pulmonary complications following spinal cord injury. Dr. Stover holds a medical degree in pediatrics from the Jefferson Medical College.

Kate Pew Wolters was the Board Chair of the Steelcase Foundation, the corporate foundation of Steelcase Inc., the world’s largest manufacturer of office furniture. Prior to assuming this position, she served as executive director of the foundation. She also has served as the director of the Grand Rapids Center for Independent Living and as a clinical social worker. Wolters was a presidential appointee to the National Council on Disability.



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