

AACN POSITION STATEMENT ON NURSING RESEARCH

Position Statement: *Nursing research worldwide is committed to rigorous scientific inquiry that provides a significant body of knowledge to advance nursing practice, shape health policy, and impact the health of people in all countries. The vision for nursing research is driven by the profession's mandate to society to optimize the health and well-being of populations (American Nurses Association, 2003; International Council of Nurses, 1999). Nurse researchers bring a holistic perspective to studying individuals, families, and communities involving a biobehavioral, interdisciplinary, and translational approach to science. The priorities for nursing research reflect nursing's commitment to the promotion of health and healthy lifestyles, the advancement of quality and excellence in health care, and the critical importance of basing professional nursing practice on research.*

As one of the world leaders in nursing research, it is important to delineate the position of the academic leaders in the U.S. on research advancement and facilitation, as signified by the membership of the American Association of Colleges of Nursing (AACN). In order to enhance the science of the discipline and facilitate nursing research, several factors need to be understood separately and in interaction: the vision and importance of nursing research as a scientific basis for the health of the public; the scope of nursing research; the cultural environment and workforce required for cutting edge and high-impact nursing research; the importance of a research intensive environment for faculty and students; and the challenges and opportunities impacting the research mission of the discipline and profession.

Nursing Research: A Scientific Basis for the Health of the Public

Nursing research provides the scientific basis for the practice of the profession. Using multiple philosophical and theory-based approaches as well as diverse methodologies, nursing research focuses on the understanding and easement of the symptoms of acute and chronic illness; prevention or delayed onset of disease or disability, or slowing the progression thereof; finding effective approaches to achieve and sustain optimal health; and improvement of the clinical settings in which care is provided (National Institute of Nursing Research, 2003). The study of professional socialization and the educational processes that best prepare nurses and nurse scientists to succeed are also appropriate foci of nursing research, given the growing demand for increasing efficiency and effectiveness in higher education and the critical need for leadership development in all areas of the nursing profession.

The critical societal issues that influence the direction of nursing research usually flow from individual- and population-based health determinants. Such health determinants are multifactorial in nature, including: the physical environment for work and life; behaviors of individuals, families, and communities; biologic factors including genetic predisposition to health problems; social factors including socioeconomic position and

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resources; discrimination factors and the availability of social networks as well as access to and use of various health services (Longest, 2002).

Nursing research also is guided by several major national health policy directives, an example of which is *Healthy People 2010: Understanding and Improving Health* (U.S. Department of Health and Human Services, 2000). The two overarching goals are: 1) helping individuals of all ages to increase life expectancy and improve their quality of life, and 2) eliminating health disparities among different segments of the population in the United States. Health disparities are noted among individuals and families who are uninsured and lack access to healthcare (Institute of Medicine, 2002). However, despite socioeconomic level or insurance coverage status, “Racial and ethnic minorities tend to receive a lower quality of healthcare...” according to the Institute of Medicine’s report on *Unequal Treatment: Confronting Racial and Ethnic Disparities in Healthcare* (2003a, p.1). Understanding such disparities and testing strategies for their resolution are major priorities for health science, including nursing research.

Today’s complex health problems are not amenable to single-discipline research approaches. While nursing, social science, and biomedical research approaches make unique and independent contributions to the public’s health, they also complement each other and bring balance to the nation’s health and research agenda. Interdisciplinary research is an essential characteristic of nursing research because multiple perspectives are required for the complex study of health and illness experiences of society.

In order for nursing to be at the forefront of knowledge generation and address societal issues and health care, nursing research must be relevant to health and illness situations, scientifically rigorous, and readily translatable into practice and health policy (Potempa & Tilden, 2004). To this end, the community of nurse scholars recognize that the science of nursing is growing rapidly and they are committed to the challenges posed by the constant progression of new knowledge.

Scope of Nursing Research

Nursing research encompasses a wide scope of scientific inquiry including clinical research, health systems and outcomes research, and nursing education research. Clinical research, based on biological, behavioral, and other types of investigations, provides the scientific basis for the care of individuals across the life span and occurs in any setting where nursing care is provided. Health systems and outcomes research examine the availability, quality, and costs of health care services as well as ways to improve the effectiveness and appropriateness of clinical practice. Finally, nursing education research focuses on how students learn the professional practice and discipline of nursing as well as how to improve educational strategies to prepare clinicians and scientists.

Clinical Research

The scope of clinical research ranges from acute to chronic care experiences across the entire life span; health promotion and preventive care to end-of-life care; and care for individuals, families, and communities in diverse settings. It is imperative for nursing research to take a farsighted approach in order to have greater impact in the future. For

example, recent discoveries in the genetic basis of disease and behavior may help nurse scientists to develop more effective strategies to manage symptoms and tailor interventions.

Nursing's expanded view of health emphasizes health promotion, restoration, and rehabilitation, as well as a commitment to caring and comfort. In this way, nursing research differs from biomedical research. The focus of biomedical science on the discovery of disease causation and cure is essential but not solely sufficient to improve health. Despite the dramatic successes of improved diagnostic and therapeutic modalities, improvements in overall health of the public require a broader approach. Some diseases are better prevented than treated, others simply cannot be cured, and suffering and irreversible changes such as aging are part of the human experience. Indeed, health can be far better maintained when it is viewed in the broader context of lifestyle, culture, and socioeconomics.

Nurse researchers study how to assist individuals and groups as they respond to health and illness experiences (e.g., reducing side effects of illness and treatment) and address social and behavioral aspects of illness and quality of life. Much nursing research is biobehavioral in nature, seeking to understand the relationships among biological, behavioral, psychological, and sociological factors. These factors are integrated in all beings. For example, recent discoveries demonstrate that biological factors (e.g., genetic background, neuronal connections, and brain plasticity) affect behavioral factors and that behavioral interventions (e.g., diet and exercise) affect biological factors (e.g., cell functions).

Complex problems in human health require interprofessional approaches. Interdisciplinary research is one of three major areas defined in the National Institutes of Health (NIH) Roadmap (NIH, 2004). Nurses are uniquely qualified to lead and participate in interdisciplinary research teams because their education includes courses from all health-related disciplines (e.g., physiology, pharmacology, psychology, and sociology) and they focus on the integration of these disciplines in providing comprehensive care. The nursing research priorities identified by the National Institute of Nursing Research (NINR) illustrate the vital contributions of nurse scientists. Federal priorities evolve within the nursing community and can be found on the NINR Web site (<http://www.nih.gov/ninr>). These areas include chronic illnesses or conditions, behavioral changes and interventions, and response to compelling public health concerns. Particular attention is given to health disparities and vulnerable groups such as minorities, infants, youth, and older adults.

Health Systems and Outcomes Research

Nursing research on health systems and outcomes seeks to identify ways that the organization and delivery of health care influence quality, cost, and the experience of patients and their families. While research on such topics is not exclusive to any single discipline, nursing has a particular focus that brings important balance to the health and biomedical research agenda for the nation. For example, nursing research is integrated with health services research regarding issues of organization, delivery, financing, quality, patient and provider behavior, informatics, effectiveness, cost, and outcomes. It evaluates both clinical services and systematic structures in which those services are

delivered; it explores appropriate balance of personnel to provide effective and efficient care while controlling costs of health care. As the health care environment changes rapidly, the consolidation of health plans and care settings continues. Large numbers of Americans are indigent and/or lack adequate health insurance and therefore do not receive even minimal health care. The containment of costs, continued problems with access to care, and efforts to develop quality care has increased the demand for nurse researchers to broaden their understanding of the research continuum to include the development of knowledge and skills in health services research. This area of research is supported largely by the Agency for Healthcare Research and Quality (AHRQ) and provides evidence on which to base clinical practice (<http://www.ahrq.gov>).

Nursing Education Research

Nursing education research centers on developing and testing more efficient educational processes, identifying new ways to incorporate technology in order to enhance learning, and discovering more effective approaches to promoting lifelong learning and commitment to leadership. To achieve these goals, the use of rigorous research strategies in the assessment of the teaching-learning process and outcomes at all levels of nursing education is essential from baccalaureate and graduate education through. The continuous supply of well-educated nurses is critical to maintain and enhance our nation's health, especially in light of the changes in the demographics of the population. To this end, new strategies for recruiting and retaining bright young men and women from diverse educational and cultural backgrounds into nursing must be developed and tested. In addition, new models of nursing education are needed to prepare nurses for faculty and research positions earlier in their careers. These efforts must assume top priority if nursing research is to continue to evolve. The lack of recognition and funding for this type of research has greatly impaired progress in this area.

Scientific Integrity

Scientific integrity and the ethics of investigation transcend and are part of all nursing research ventures. Nursing's commitment to an egalitarian application of professional standards and ethics has earned the trust of the public. Similarly, nursing research is guided by commitment to ethical standards in all phases of scientific discovery and use of knowledge. As participants in the global interdisciplinary scientific community, nurse researchers examine and debate the ethical dimensions and dilemmas inherent in designing, conducting and reporting research.

Nursing education provides grounding in major research ethical constructs from the Nuremberg Code (1947), Declaration of Helsinki (World Medical Association, 1964), National Research Act of 1974 (Public Law 93-348), and Belmont Report (NCPHS, 1979); all of which are reflected in the federal Common Rule regulating research in the United States (DHHS 45CFR46, 1991). These ethical and legal precepts simultaneously guide investigators as well as nurses caring for patients who are also research subjects.

Nurse researchers, whether working alone or within interdisciplinary teams, consider appropriate boundaries between practice and research, address conflicts of interest,

provide for protection of subjects, and maintain systems of checks and balances to ensure the integrity of the research enterprise. As part of the profession's responsibility for advocacy, nurses take appropriate action whenever scientific misconduct is identified.

Creating a Culture and Workforce for Nursing Research

Regardless of discipline, the research enterprise can thrive only when certain prerequisites are in place, including a culture supportive of research and scholarship; strong mentoring in the intellectual work of the discipline; educational programs to ensure an adequately sized and appropriately educated research workforce; and provision for necessary infrastructure and funding mechanisms to support coherent programs of research.

Cultures supportive of research and scholarship generally develop within academic institutions where knowledge development, discourse, and debate are expected and encouraged. Given the broad scope of nursing research, this also means that nurse researchers require environments that support integration of various approaches to inquiry. Collaborative research among nurse scientists that brings together a range of perspectives on a particular question will result not only in a better understanding of and coherence in the entire discipline, but also in an understanding of how knowledge from one field complements and extends learning in another. Further, contemporary research problems demand that nurse scientists move into more interprofessional collaboration, team-based work, and increase attention to the rapid progression to safe and appropriate practical application of findings (NIH, 2004).

Programs of nursing that offer baccalaureate and higher degrees lay the groundwork for the research enterprise by preparing professional nurses capable of using scientific knowledge in their practice and contributing to new knowledge. Such programs are committed to teaching and integrating nursing research as well as other relevant research (e.g., biomedical, clinical, health care services, business, public health, and health care policy) into all nursing curricula. Teaching from such a base prepares graduates to evaluate and use evidence appropriately and, with advanced preparation, generate new knowledge for nursing practice.

The ultimate goal of research training in nursing at all levels is to strengthen the profession's contribution to enhancing the health and healthcare of individuals and populations. The expectations and competencies of graduates at each level of nursing education in regard to research are described below:

- *Baccalaureate programs* prepare nurses with a basic understanding of the processes of research. Graduates can understand and apply research findings from nursing and other disciplines in their clinical practice. They understand the basic elements of evidence-based practice, can work with others to identify potential research problems, and can collaborate on research teams.

- *Master's programs* prepare nurses to evaluate research findings and to develop and implement evidence-based practice guidelines. Their leadership skills enable them to form and lead teams within their agencies and professional groups. They identify practice and systems problems that require study, and they collaborate with scientists to initiate research.
- *Practice-focused doctoral programs* prepare graduates for the highest level of nursing practice beyond the initial preparation in the discipline. Graduates obtain the highest level of practice expertise integrated with the ability to translate scientific knowledge into complex clinical interventions tailored to meet individual, family and community health and illness needs. In addition, these professionals use advanced leadership knowledge and skills to evaluate the translation of research into practice and collaborate with scientists on new health policy research opportunities that evolve from the translation and evaluation processes. They are prepared to focus on the evaluation and use of research rather than the conduct of research (AACN, 2004a).
- *Research-focused doctoral programs* prepare graduates to pursue intellectual inquiry and conduct independent research for the purpose of extending knowledge (AACN, 2001). Graduates are expected to plan and launch an independent program of research, seek needed support for initial phases of the research program, and begin to involve others (i.e., students, clinicians, and other researchers) in that work.
- *Postdoctoral programs* provide graduates from research-focused doctoral programs not only with a period of time devoted fully to further developing research skills, but the opportunity to establish their research program with the formal mentorship of senior investigators. Formal postdoctoral study generally ensures that an individual's research program is firmly launched before facing the multiple demands of any academic, clinical, or administrative position.

Just as all collegiate schools of nursing do not offer the total range of degree programs, not all academic nursing environments can offer equal support to the research enterprise. While it is understandable that many nursing schools aspire to offer the research-focused doctorate, not all schools are well-suited to this activity. In order to ensure that future nurse scientists successfully develop and sustain significant programs of research, serious attention must be paid to the research culture in which they will be trained. The major components required for the effective preparation of new scientists, as outlined in AACN's *Indicators of Quality in Research-Focused Doctoral Programs in Nursing* (2001) include:

- productive research faculty who are at the cutting edge of their field of inquiry;
- environment in which mentoring, socialization of students, and a community of scholars is evident;
- coherent and well-designed programs of study, including opportunities for interdisciplinary study and research;
- adequate infrastructure and resources, and
- highly qualified and motivated students.

The next stage of development in nursing research encompasses the creation of highly dynamic research environments that enable a greater proportion of faculty to excel as scientists, in that the volume and quality of their work has a substantial influence on health care. Such environments are characterized by the following attributes: an increasing number of positions in which faculty concentrate almost entirely on research, research mentorship and research leadership; balancing of teaching, research, and service missions across the school as a whole rather than within individual faculty activities; and inclusion of students at all educational levels directly in faculty research (Potempa & Tilden, 2004).

The nursing research enterprise has made great strides over the last 30 years, and many nursing schools have well-established research environments. Nevertheless, future progress may be impeded by two worrisome trends: 1) most nursing doctorates are earned much later in life than is true in other disciplines, thus shortening the time available for an active research career, and 2) production of new nurse faculty (and in particular, new nurse scientists) is far behind what is needed now and in the future.

A significant challenge facing the nursing research community is that nurses tend to pursue doctoral study later in their careers than those in other research fields. Almost one-half (49%) of graduates from nursing doctoral programs in fiscal year 2002 were between the ages of 45 and 54 years of age, with a median age of 47 (National Science Foundation et al., 2004). Given that the median age of retirement for doctorally prepared nurse faculty is 63.1 years, they have only a limited number of years to accomplish the career goals expected at this level, such as becoming master teachers; building long-term, funded research programs; and using their expertise to shape health policy at the state, national, and international levels (AACN, 2004b; Hinshaw, 2001).

A major policy and cultural shift is needed in nursing doctoral education to achieve earlier entry into research careers (National Research Council, 2005). The mean number of years from completion of a baccalaureate degree to graduation from a research-focused doctoral program is 21.8 years for nurses, compared to 12.7 years for all research doctoral recipients (National Science Foundation et al., 2002). Likewise, the mean number of years registered in a doctoral program prior to graduation is 1.8 years longer for nursing compared to other fields (9.3 and 7.5 years, respectively), a function of part-time study (Berlin, Wilsey, & Bednash, 2005; National Science Foundation et al., 2002). Earlier matriculation into doctoral programs and full-time study will enable graduates to establish long-term careers in academic nursing and develop sustained programs of research and teaching.

The shortage of doctorally prepared faculty will continue to exert a negative effect on nursing's research agenda well into the future by severely limiting the pool of available nurse scientists, straining the human and fiscal resources necessary for the conduct of research, and creating circumstances in which new investigators will have difficulty in establishing and maintaining productive research programs. Strategies have been

identified to ensure the continued vitality of nursing research during this critical time (AACN, 2003). In addition, schools may consider exploring whether interdisciplinary faculty appointments will be useful in supporting teaching and research efforts in nursing doctoral programs (Potempa & Tilden, 2004; AACN, 2003).

Importance of a Research-Intensive Environment

A research-intensive environment is essential in order to generate the science base for nursing and interprofessional practice and to educate future generations of nurse scientists. Financial support and a strong value for generating as well as disseminating knowledge must be present within departments and schools, in the larger academic institution, and at the national level.

The importance placed on the research mission by the larger institution has a major impact on a school of nursing's research environment. In research-intensive environments, support is evident in the hiring and retention packages provided for investigators; peer and administrative review mechanisms used for appointments and promotions; availability of start-up research funds for faculty; and support for continuing faculty development in research, such as professional leaves and sabbaticals, career awards, and pilot funding. It is in this kind of environment that nurse scientists are able to engage in and/or lead interdisciplinary research activities.

Schools of nursing provide the research environment for faculty and the next generation of nurse scientists. A supportive infrastructure may include an office or center for research; concentrated centers or areas of research excellence; formative and summative mock reviews of grant applications and manuscripts; informal or formal mentorship programs; visiting scholars; and internal and external consultants. Institutional research training grants and leadership in interdisciplinary research training grants provide key infrastructure support for educating the next generations of clinical scientists. The research productivity of the faculty (including grants obtained and sustained, manuscripts published, and the number of doctorally prepared graduate faculty) and the successes of doctoral program graduates are indicators of an environment in which faculty research can flourish (AACN, 2001).

Research productivity in schools of nursing is enhanced by faculty appointed on research tracks as well as by tenure-track faculty with active programs of research. Faculty with research appointments devote their full effort to research and are often expected to generate their salaries through research funding. Research-track faculty enhance the productivity of the overall research enterprise through collaborating with tenure-track faculty as well as developing their own programs of research. As a result, faculty build research programs supported by multiple grants and greatly expand the scope and impact of their science.

Moreover, wider university support for field-specific and interdisciplinary research is crucial to enable nurse scientists to lead interdisciplinary research teams and to participate fully as team members. Policies regarding distribution of indirect cost returns,

establishment of centers of excellence across disciplinary or professional boundaries, and central support for interdisciplinary work enables teams of committed researchers to exchange views and collaborate effectively to solve complex scientific problems. In such settings, research permeates the entire academic enterprise.

As adequate research infrastructure at the national level also is critical. Opportunities for nurse scientists to present their work for scrutiny and consideration by colleagues include peer-reviewed discipline-specific and interdisciplinary journals that cover the full spectrum of nursing research. In addition, regional, national, and international conferences provide wide exposure of nursing research within and outside the discipline. Nurse scientists obtain funding from a wide range of federal and private sources. Indeed, diversity of funding streams is essential to maintain a healthy research infrastructure. Federal funding sources including NINR and other NIH institutes provide funding for nursing research and support for research training for pre- and post-doctoral students, new investigators, and mid-career researchers. AHRQ funds research on the outcomes, effectiveness, and quality of health care conducted by all health professions scientists. Other agencies within the Department of Health and Human Services (DHHS) such as the Centers for Disease Control (CDC), Agency for Substance Abuse and Mental Health Services (SAMSHA), and Health Resources Services Administration (HRSA) provide funding for focused program evaluation research and demonstrations. Professional, public, and private organizations also offer competitive research funding and training support (e.g., American Heart Association, The Robert Wood Johnson Foundation, and The John A. Hartford Foundation).

Despite a documented need for more doctorally prepared research faculty and postdoctoral education, the quality of preparation possible in any academic nursing setting will be compromised if the research environment is not supported adequately. Building the research infrastructure is vital to strengthening nursing research's impact on the public's health and health care outcomes. Therefore, increasing the funding base available to nurse scientists is critical.

The Research Mission: Challenges and Opportunities

Nursing research faces a number of challenges and opportunities stemming from rapid growth and limited resources. In the past two decades, with the rapid expansion of resources for research, nursing's contribution to evidence-based practice and health policy has increased exponentially. Even so, a number of challenges are preventing the discipline of nursing from achieving its full scientific potential.

Career Trajectories of Nurse Scientists

Basic to all other challenges faced by the nursing research community is the problematic nature of the typical nurse scientist's career trajectory (NRC, 2005): late commitment to doctoral preparation, which in turn severely truncates opportunities for research and leadership. This traditional career pathway drastically curtails development of the research base for nursing practice because of shortened programs of investigation. In addition, it limits the ability of nurse scientists to provide multiple levels of leadership

(especially national health policy leadership) and thus to impact policy. The need to change this career trajectory has instigated the development of baccalaureate-to-doctoral programs. However, in order to provide incentives for early entry into doctoral programs, future nurse scientists will require continued and expanded commitment and availability of funding, such as institutional (T32), individual predoctoral (F31), and postdoctoral (F32) fellowships.

Unfortunately, traditional nursing career pathways have not shifted dramatically. As Potempa and Tilden (2004) noted, the teaching component has dominated the tripartite academic mission, sometimes at the expense of research. Equal emphasis can be placed on research development in schools of nursing, such that curricular demands coincide with faculty research expectations. Alternative types of faculty workloads can be created to foster the development of comprehensive and cohesive programs of research at schools of nursing. These alternatives may include a system of incentives and rewards, such as attractive start-up packages and early investment by administration to sustain focused faculty research.

Impact of the Nursing Faculty Shortage on Research

Schools of nursing and affiliated health organizations are under major financial pressures to deliver educational and health services more effectively. The national shortage of nurses has prompted schools of nursing to increase undergraduate and graduate enrollments during a time when there are dire shortages of doctorally prepared faculty (Berlin & Sechrist, 2002; Hinshaw, 2001; Anderson, 2000). Shortfalls in the number of doctorally prepared faculty are influenced by two factors: 1) the impact of faculty age and retirement timelines and 2) a diminishing pool of replacement faculty (Berlin & Sechrist, 2002). These shortages pose a serious challenge to the generation of knowledge for nursing practice and health policy. This crisis will impact systematic initiatives that enhance the academic research enterprise, and it has significant implications for the long-term research productivity for the discipline. Limited financial resources in the context of a larger student-to-faculty ratio create competing demands across academic institutions in general, and specifically, influence the tripartite mission of nursing education, research, and practice. Balancing these multiple roles requires the creative integration of education and research and the use of interdisciplinary opportunities to enhance research productivity. Mechanisms that protect and promote the core mission of an environment of discovery and maintain the research infrastructure must be developed and tested. Incentives to position faculty to compete effectively for extramural research while at the same time preserving the teaching mission, should be considered. Specialized faculty assignments (i.e., clinical versus research) designed to strengthen research productivity warrant further evaluation.

Research Collaboration and Partnerships

Additional efforts to promote and support collaborations by a variety of scientists are needed. Institutions must develop effective mechanisms that improve linkages across research programs in biomedical, clinical, health services, and prevention research (Institute of Medicine, 2003b). Many studies in all disciplines, including nursing, have been conducted at single sites or with investigators of a single discipline. Collaborative

and interdisciplinary research requires substantial shifts in thinking about many aspects of the research process, ranging from leadership and communication to complex budgetary issues (Larson, 2003). Therefore, education for interdisciplinary research must be part of doctoral and post-doctoral education. This type of research will also require concentrated efforts by university administrators to reduce the fragmentation introduced by mechanisms such as college-based budgeting and restrictive arrangements regarding indirect-cost recovery. Finally, the growing opportunities for research partnerships with private and public industries demand continued vigilance regarding research integrity, conflicts of interest, and academic freedom.

Research-Focused Doctoral Programs

The number of research-focused doctoral programs in nursing has increased from 54 in 1992 to 93 in 2004. Five-year trend data from 2000 to 2004 showed an average increase of 118 doctoral students enrolled per year; however, the pattern of graduations was erratic, indicating no trend. In fall 2004, there were 3,439 enrollees and 412 graduates, reflecting a graduation rate of only 12 percent, in large part because more than half of enrollees were part-time students (Berlin, Wilsey, & Bednash, 2005; Berlin, Bednash, & Alsheimer, 1993). While establishing a doctoral program is seen to be desirable because it allows an institution to offer the full range of educational opportunities, any future growth in research-focused doctoral programs must coincide with an increased number of graduates to fill faculty positions and enhance the generation of nursing research. Moreover, there must be assurance that research-focused programs attest to the *Indicators of Quality in Research-Focused Doctoral Programs in Nursing* and meet the recommendations regarding the full range of resources (human, financial, and infrastructure) needed to support high quality programs (AACN, 2001).

Funding for Nursing Research

Given the scope of nursing research, the increased numbers of well-prepared scientists in the scholarly community, and the multiple societal and health/illness issues demanding attention, the resources for nursing research are severely strained. To facilitate nursing research, major new sources of funds are needed to build long-term research programs and support career trajectories for nurse scientists whose programs of research are devoted to the generation of knowledge for nursing practice and health policy. Developing new centers of excellence, as evidenced by strong research-intensive nursing environments and sustained programs of translational, cutting-edge research will require considerably more resources than are currently available.

A major positive step was the establishment of the NINR in April 1986. However, while its funding has grown from approximately \$11 million to \$135 million, this is a small amount relative to allocations for other health science institutes (e.g., dentistry) and for major disease category funding such as cancer and Alzheimer's disease. The budget of NINR, which doubled with the rapid increase in the NIH budget from 1999-2004, needs to be doubled once again to provide the resources for the strong additional contributions that can be made by nursing research to the health of the American public. In addition, because of the interdisciplinary nature of much of nursing research, greater diversity in

the funding opportunities available to nurse scientists should be pursued, including increased funding from other NIH Institutes, AHRQ, CDC, and a wide array of foundations.

Summary

The essence of a discipline is its body of scientific knowledge, its system of values and ethics, and its societal worth. In a practice discipline such as nursing there is the added dimension of thoughtful and discriminating application of knowledge from other disciplines and perspectives (Carper, 1978). It is this complex relationship between the building of a body of science, the utilization of knowledge from multiple disciplines, and the application to practice and health policy that presents opportunities and challenges for the academic nursing community.

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AACN Task Force on the Revision of the Research Position Statement

Ada Sue Hinshaw, PhD, RN, FAAN, *Chair*
Dean, School of Nursing
University of Michigan
Ann Arbor, Michigan

Katharyn A. May, DNSc, RN, FAAN
Dean, School of Nursing
University of Wisconsin-Madison
Madison, Wisconsin

Pamela H. Mitchell, PhD, CNRN, FAAN
Associate Dean for Research
School of Nursing
University of Washington
Seattle, Washington

Mary Ellen Wewers, PhD, MPH, RN, FAAN
Professor and Associate Dean for Research
School of Public Health
The Ohio State University
Columbus, Ohio

Carolyn Yucha, PhD, RN
Dean, School of Nursing
University of Nevada, Las Vegas
Las Vegas, Nevada

Linda E. Berlin, DrPH, RNC, *Staff Liaison*
Director of Research and Data Services
American Association of Colleges of Nursing
Washington, DC

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