

## Leadership in Nursing: Developing a Research Career

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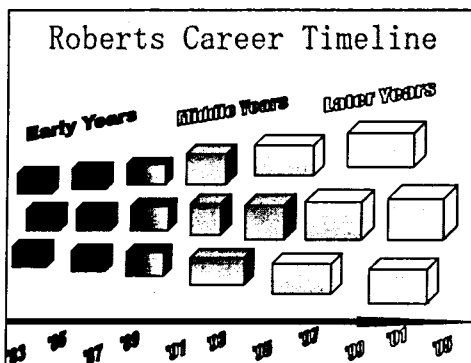
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Strong nursing researchers generate the evidence that allows nurses to control their practice and the discipline. Strong nursing researchers are needed for the critical acceptance of nursing research by other disciplines and credibility to the knowledge generated. These individuals provide leadership by being at the forefront of innovation and knowledge that informs practice, research and policy.

Although clinically relevant research is needed, basic research is also required to describe the mechanisms that influence nursing phenomena and that underlie nursing interventions. Clinical studies focus on translating basic research into practice or the discovery of new associations among clinically relevant factors important to nursing assessment and intervention.

Although the role of research in nursing and practice is widely understood, the process by which a nurse becomes an expert researcher is less well known. The purpose of this paper is to describe how a nurse researcher can become an expert using examples from my career and to describe the environmental resources necessary for the success of this individual.

### Career Timeline



A researcher career is developmental in nature and has three stages. The purposes of each stage focus on knowledge development, but more importantly, on the development of skills of the researcher and his/her contribution to nursing knowledge. Research in the early years may be small in nature. Although publications and presentations in this stage may be numerous, the research studies are often small and not complex but provide the foundation for development of larger studies that characterize the middle and later years. By the later years, the researcher has made significant contributions to nursing knowledge, mentors other researchers and engages in development of research, academic and political policy.

### The Early Years

In the early years, the goal is to get STARTED, even though it may be small. This is the hard part of development. The skills of the young investigator are poorly developed and access to resources and collaboration are poorly developed. The new investigator must reach out to others who can provide access to research expertise, resources. Research and dissemination activities are not building on each other.

#### Develop Research Expertise

The primary goal is to develop research expertise in methodology (e.g., surveys, interventions), measurement, data collection, statistical analysis and dissemination of research findings. This begins with an assessment of skills, knowledge and resources of the new investigator, but always with a GOAL in mind. Goals should be no longer than 1 to 3 years because knowledge, opportunities and your abilities will change drastically during that time. The keys to success are to capitalize on opportunity, maintain persistence and be creative.

#### Multiple Lines of Research

Multiple lines of research are essential to research productivity. To develop research resources, the new investigator must be creative and persistent have multiple, but related, lines of research. Some research is easier to get funded and to implement. Other lines of research may be very innovative or require a



considerable amount of investigation before moving into clinical studies. Nearly all established researchers integrate these multiple areas of research as they learn more about phenomena and theories and find new linkages between these. When I started my research career, I had four to five lines of research that appeared disparate. However, I learned from each study and was able to find linkages to other concepts among these lines of research while also exploring new areas. My early work on cognitive impairment led to identifying factors that contribute to this impairment. While appropriate to study more than 20 years ago, current research has evolved into exploring the genetic and biological mechanisms for the development of cognitive impairment and new strategies for assessment and intervention.

I have consistently examined the physical and psychological factors related to physical performance and mental health. This work has focused on balance, gait, falls and independence in daily activities. For the past seven years, Nagi's model of disability has driven my research. More recently, I have begun to explore the biologic and physical mechanisms for the development of disability.

Although the majority of my research is cross-sectional or longitudinal in nature, I have done considerable work on the effects of exercise on physical performance and disability. Currently, I am exploring basic research to understand the physical performance changes, and inflammatory mechanisms in explaining the effects of exercise on physical performance and disability. These new directions are very innovative and not well developed.

### **Collaborators and Mentors**

In the early years, investigators should try to engage collaborators who are experienced researchers and to cultivate a mentor. To do this, they could become part of a research team of a potential collaborator or mentor. Importantly, the *new investigator must become an engaged member of this team, contributing to the implementation and dissemination activities of the study.* In the early years, researchers must engage others who have research skills and resources that they do not have but will need to develop their own research career.

In the early years of my research career, I found two mentors. The first was a nurse researcher with an extensive network of collaborators and nursing leaders and excellent written and communication skills. The second was a sociologist who was supportive, an expert researcher in gerontology and had the time to spend in my development and the many reviews and editorial comments on my manuscripts, publications and research applications. The second mentor also was excellent in providing career guidance and problem solving. In addition to mentors, I established collaborative relationships with a geriatrician, physical therapist, statistician, sociologist, biomedical engineer and social worker.

The relationships with my mentors and research collaborators lead to other research opportunities and scholarly activities. I became known to young and mature researchers in gerontology where I built credibility in a multidisciplinary network of geriatric researchers. This multidisciplinary network later became a key resource in developing multidisciplinary grants, becoming a consultant in research and practice and leveraging of resources for research.

### **Dissemination is Essential**

The scary part for many young investigators is to begin dissemination activities. Do not look for safe settings but seek out presentations at national and international meetings and find multidisciplinary organizations to present and publish your work. By doing this, the standards for academic rigor are high, and with a good mentor or experienced collaborator, well within reach. Simultaneously, good writing and communication skills will develop, and the young investigator will become comfortable over time in these arenas that are essential to the success of a mature investigator.

### **Research Productivity**

In the early years, I had fifteen funded pilot studies. I also took over as principal investigator a grant funded by the National Institutes of Health and was co-investigator on another large grant funded by the same institute. I not only developed a cadre of collaborators but also gained experience in balance measurement with a force plate, isokinetic strength measurement, gait analysis and measures of psychosocial outcomes.

As a result of my activities in the early years, I obtained 15 funded pilot studies and had 1 international, 20 national and 18 regional presentations. My publications included seven research articles and a book chapter. I became well known for my research and won the Outstanding New Investigator Award from the American Nurses Association. From this example, you can see that the early years are not short and involve a lot of activity.

### **The Middle Years**

With larger funding, an investigator can hire people to help implement the research and disseminate the findings. The investigator at this career stage learns grantsmanship, how to supervise others to maintain integrity of the study and protocols, how to manage resources and more complex research studies. The types of studies evolve as the research



expertise of the investigator continues to grow.

Middle career investigators may extend their work into other populations, sites and research questions. They build upon their and others' empirical and theoretical knowledge that is highly dependent on dissemination of findings. The interdisciplinary network grows as these investigators present at national and international meetings, publish in nursing and multidisciplinary journals and even write book chapters or books based upon their research. This is the time for the middle career investigator to publish the clinical applications of their research and those of others. The expertise of the investigator becomes established, and they become consultants and peer reviewers for research journals and research applications.

In my middle years of development, I received three grants over \$1 million—two of which were clinical trials of exercise. The research findings supported Nagi's model of disability, and I added more concepts to the constructs of this model. During this time, I became a consultant on grants and for clinical problems. I also became involved in the research of others and was a peer reviewer of manuscripts and research grants.

## The Later Years

In the later years, the investigator is an expert researcher whose work is nationally and internationally known. Researchers who reach this stage of development are characterized by professional awards and are sought after as a mentor. These researchers have too many research ideas to pursue alone and often have a back log of manuscripts to write.

The investigator has finally made it but is not done. Investigators in the latter years of a research career seek larger research funding for more complex research designs or data collection and sample and often move into experimental and prospective designs. In this stage of a research career, a challenge is sustaining presentations and publications. Now is the time the researcher becomes mentors to others and facilitates the research and career development of researchers.

In the later years of my research career, I generated support for Nagi's model of disability and expanded and refined the measurement of activities of daily living. I clarified conceptualizations, measurement and nomenclature, most recently in a chapter included in a book reviewing nursing research and as co-author of a book on the oldest-old.

## Environment for a Research Career

The development of a research career has to be supported by the environment of the researcher. Research is a priority as is teaching and professional service. Faculty and students must be involved in research, whether funded or not. Resources must be available to develop and implement studies. Research activities and research findings need to be integrated into academic programs. The advent of evidenced based practice requires nurses to be knowledgeable consumers of research, and reading and applying research must begin early in all nursing programs.

If research is a priority, resources are made available to sustain it. There must be time for research and, dissemination of findings. Money should be available for pilot studies, copies of article, purchase equipment, preparation of grants and manuscripts and travel to present findings. Importantly, there needs to be an environment that supports collaboration that also includes students.

## Points to Remember

### Make Progress

To develop a research career, investigators must continue to develop personal skills. Creativity is the fun part, and academic rigor is the difficult part. They must maintain openness to new or competing ideas with the perspective that anything is possible until proven otherwise. During their career, researchers should invest in developing strong interpersonal skills that will open doors and other opportunities.

Investigators who truly have a research career remember to continue to learn because it will open doors to other opportunities for research, dissemination and contributions to society and the discipline of nursing. They continue to grow their knowledge of the literature, research methodologies, measurement strategies and statistical analyses.

Career researchers build on their own research and that of others. They develop and test broad based empirical support for theories and extend their research into multiple populations, refine measurement strategies, develop and refine interventions. Investigators committed to a research career seek out discussions with other researchers and clinicians. These researchers collaborate within and across disciplines in research, clinical and academic activities. They do this while making dissemination of research a priority.

To make progress in a research career, investigators must maximize opportunities. They identify areas where



knowledge is needed and then determine what research is needed. They are not driven by methodology or philosophy or what is comfortable. For this kind of career, researchers must define their research broadly and embrace opportunities for more than one line of research. Investigators must collect data for more than one purpose that can be the source for secondary data analysis and are creative about research with little or no funding. To truly have a significant and broad impact, researchers must disseminate findings within and outside the discipline to build credibility for their work and the discipline of nursing.

### **Leaving a Legacy**

Career researchers contribute to the discipline and society. They become consultants for research, education, practice and policy. They educate the public based on their research and that of others. They participate in health policy and professional organizations. Importantly, they become mentors for future researchers and clinicians.

In summary, successful career researchers start small but think big. They are creative and resourceful. They collaborate with others as they develop a program of research that these researchers disseminate within and outside nursing. In their later years of a research career, researchers consult and contribute to research, education, clinical practice, health policy and professional organizations and become mentors to future investigators. Most of all, they have fun doing it!