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## Preparing Oncology Nurse Scientists: Opportunities at the National Cancer Institute

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Doctoral preparation of nurse scientists has moved beyond the narrow goal of preparing nurses in the field of education. As nursing education shifted away from hospital-based programs toward baccalaureate and higher education, doctoral preparation in curriculum development and adult and higher education was the primary means for meeting the growing need for nursing academicians. As more doctoral programs opened with a wider variety of course work and research topics to explore, nurse scientists increasingly were being prepared to assume more diverse roles.

In 1986, Shores recommended that nursing should define the roles that doctorally prepared nurses would be expected to fulfill in the healthcare system. Since that declaration, revolutionary changes have occurred in the system. For oncology nurses, these changes have included a markedly changed profile of patients using the healthcare system, an expanded array of treatments available to patients, and increasing restrictions placed on patients in accessing adequate medical care. To address the critical challenges facing the nation's healthcare needs, oncology nurse scientists are responding by becoming prepared not only in the area of patient-centered research but also in the fields of basic science, epidemiology, health services research, and ethics. Nursing doctoral programs are responding as well. For example, Jones and Lusk (2002) argued for the potential for health services research to aid nurses in addressing issues associated with access, affordability, and quality of care.

This article outlines the fundamental elements of a typical postdoctoral experience and describes the array of postdoctoral programs at the National Cancer Institute (NCI), with a particular focus on the Cancer Prevention Fellowship Program (CPFP).

### Importance of Postdoctoral Training

The progress that has been made in the understanding of cancer and the ability to detect and treat it has changed the way we think about some cancers from acute to chronic illnesses. Doctoral preparation coupled with rigorous postdoctoral training experience will equip oncology nurse researchers with the necessary skills and knowledge to respond to this new challenge of change. By virtue of education in the diversity of methodologic approaches to studying cancer, nurse scientists are well positioned to contribute to the growing knowledge of the biology, etiology, prevention, and treatment of cancer and related morbidities.

Although doctoral preparation is a necessary first step in preparing nurse scientists, training beyond the doctoral level now is considered an essential next step. A number of experts have concluded that, in the life sciences, a formal, postdoctoral experience is "virtually mandatory for obtaining a regular position in academia or industry. One reason for this is that graduate school programs cannot alone provide the broad range of knowledge and skills required for modern research" (National Academy of Sciences, 2000, p. viii).

### Essential Components of Postdoctoral Training

Irrespective of the discipline, the primary purpose of any postdoctoral experience should be to broaden and deepen research and related skills necessary for contributing significantly to the field of study and, ultimately, society. To accomplish this goal, a high-quality postdoctoral experience should be a full-time program, range from three to five years in length, and offer a variety of learning opportunities, such as formal classes, lectures, and courses, as well as a structured mentored experience.

Sigmon and Grady (2001) noted that many nurse scientists pursuing postdoctoral training find that some requirements of training programs (e.g., full-time commitments, moving to different locations) preclude their applying for admission. This often is because many nurses eligible for postdoctoral training are older than the average "postdoc" and married with children. For this reason, nursing students at the baccalaureate and master's degree levels who show interest in research must be encouraged strongly to pursue doctoral- and postdoctoral-level work at a much earlier period in their careers.

### National Cancer Institute's Mission

The mission of NCI is broad-based, focusing on conducting and supporting research as well as training; disseminating healthcare information with respect to the cause, diagnosis, prevention, and treatment of cancer and rehabilitation from it; and continuing the care of patients with cancer and their families (NCI, 2001). With regard to its educational and training mission, NCI supports education and training in fundamental sciences and clinical disciplines for participation in basic and clinical research programs and treatment programs relating to cancer through career awards, training grants, and fellowships. NCI also collaborates with volunteer organizations and other national and foreign institutions engaged in cancer research and training activities.

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