

NOTABLE CANCER CENTER MEMBER

Teresa Woodruff, PhD



Teresa Woodruff, Executive Director of Northwestern University's Institute for Women's Health Research and the Thomas J. Watkins Memorial Professor of Obstetrics and Gynecology at the Feinberg School of Medicine, says it was her mother's love of science that inspired her to pursue a career in the field. "She was always doing the most amazing things in her first grade class," says Woodruff, whose mother taught first grade in Kankakee, Illinois for over 30 years. "I was influenced very early by her passion for education and science."

While her initial goal was to follow in her mother's footsteps and become a first grade teacher herself, it wasn't long before Woodruff's interest in scientific research took over. While pursuing her bachelor's degree at Olivet Nazarene University in Bourbonnais, she says she "soon realized it was research that captured my energies and interests." After receiving her B.A. in chemistry & zoology in 1985, Woodruff went on to Northwestern University where, in 1989, she earned her PhD in biochemistry, molecular biology, and cell biology.

Dr. Woodruff was asked to head the Institute for Women's Health Research (IWHR) when it opened one year ago. With its goal of accelerating the rate of scientific discoveries that impact women's health, the Institute fosters research by developing a wide range of coordinated projects and encouraging

collaboration among researchers in a number of different disciplines. The IWHR reports directly to the Dean of the Feinberg School of Medicine, rather than a specific department, in order to facilitate this multidisciplinary approach.

“Northwestern is world-renowned for its excellence in reproductive science,” says Woodruff. “And the Institute helps us apply those scientific discoveries to clinical practice across women’s health.” The Institute is an umbrella organization that supports the research community by creating opportunities for studying the sex differences in a range of medical disciplines, accelerates the translation of research into practice, trains women’s health experts and engages the community through its Women’s Health Registry (whr.northwestern.edu). It serves as a central depository of the research and program information that impacts women’s health throughout Northwestern University and its affiliated clinical partners.

After serving as Basic Science Director for the Lurie Cancer Center for a number of years, Dr. Woodruff became the chief of the newly created Division of Fertility Preservation in the Department of Obstetrics and Gynecology. “While they are live-saving, cancer treatments can limit or destroy a young patient’s ability to conceive children,” say Woodruff. “Because cancer treatments have improved, life expectancy for young cancer patients has increased leading to the urgent need to preserve fertility now for later use.”

Dr. Woodruff recently won a \$21 million National Institute of Health (NIH) Roadmap Grant to study fertility preservation in young cancer patients and provide information and support to patients coping with a variety of medical, psychological, and social issues surrounding cancer treatment and fertility. The program, called The Oncofertility Consortium, is facilitating collaboration within disciplines and among institutions in order to encourage creative approaches to these problems. (Dr. Woodruff coined the term, “oncofertility,” to describe this new field.)

To help this growing cadre of patients, Northwestern University’s Feinberg School of Medicine and the Lurie Cancer Center are working together to develop new technologies that allow patients to conceive after cancer treatment. These multidisciplinary projects

include one of Dr. Woodruff’s own projects to preserve and grow human follicles. The study involves harvesting follicles from ovaries of those donated by eligible cancer patients and coaxing those follicles to mature into eggs. It is hoped that when the patient is ready to conceive, the frozen tissue can be thawed and the follicles matured for the patients use.

The Oncofertility Consortium involves close collaboration with several other institutions around the country and Woodruff says she is especially proud of the role the Lurie Cancer Center has played. “Once we developed the network of activity here at the Cancer Center, it became clear that this was something other institutions could copy — and begin delivering this new kind of care to their patients, too” she says. Over the past year, she adds, Northwestern University researchers have provided the templates for their clinical research, including many of their protocols, to 50 other institutions around the country. “So many clinicians were looking for ways to provide these services to their cancer patients and just didn’t have the roadmap to get that done. So we’ve provided it, and now have this magnificent network that works together in a very altruistic way to develop technologies that help preserve fertility in young cancer patients.”

The Northwestern team has also created a Website, www.myoncofertility.org, to disseminate information about its Consortium efforts as well as a site created especially for patients, their partners and parents.

Woodruff says that the ability to directly impact patients’ lives is the most rewarding aspect of her work. “Scientists often talk about the ability to take something from the bench to the bedside, but we are actually doing that here,” she says. “Seeing the kind of work that we have developed in the mouse being adapted to human cells and then used to treat patients is a remarkable aspect of what we’re doing.”

Had she not become a scientist, Woodruff says she would have been a first grade teacher or played cello for the ELO (Electric Light Orchestra). “My fallback is music,” she says with a smile. Fortunately, for thousands of young cancer patients, as well as women of all ages facing a variety of health concerns, Woodruff decided to pursue her first passion of scientific research instead.