Kathryn L. Holloway, MD ’84: AT THE FOREFRONT OF NEUROSURGERY FOR MOVEMENT DISORDERS

Kathryn Holloway, MD ’84, discovered the realm beneath the brain during her last year at Rutgers Medical School. Starting a third-year elective, she watched, fascinated, as neurosurgeons looked through the surgical microscope, taking them deep into the intracranial region to repair an unruptured aneurysm. She found it “the most beautiful place to be,” she recalls.

A graduate of Rutgers, The State University of New Jersey (Camden College of Arts and Sciences), Dr. Holloway was inducted into the Rutgers Alumni Association Hall of Fame in May. The honor recognizes her work as a superb clinician, a groundbreaking inventor, and a respected teacher and mentor. “I was touched by this honor, but, above all, I was humbled to be recognized in the company of four outstanding fellow alumni,” she says.

A Focus on Movement Disorders

Dr. Holloway completed her residency in the Department of neurosurgery at the Medical College of Virginia, now Virginia Commonwealth University School of Medicine (VCUSM), which she chose for the strength of its program and the chair’s exceptionally caring manner with his patients. In 1990, following her training, she was invited to join the faculty of the Department of Neurosurgery, where she took on leadership of the epilepsy surgery program and later developed the movement disorders surgery program.

Annually since 1999, Dr. Holloway has received Teaching Excellence Awards from VCUSM, and she continues to spark an interest in neurosurgery in many of her students. She served as director for resident education for her first 12 years on staff, introducing new teaching conferences and restructuring existing ones.

Dr. Holloway was appointed a full professor of neurosurgery in 2003 — at the time, one of only three women in the United States to hold this position. In addition, she serves as chief of neurosurgery at the Hunter Holmes McGuire Veterans Association (VA) Medical Center in Richmond, where she built a collaborative movement disorders program that was designated as one of the six Parkinson’s Disease Research, Education, and Clinical Care Centers nationwide. The VA annually cares for more than 40,000 of the 80,000 U.S. veterans estimated to have Parkinson’s disease (PD) and associated movement disorders. It created these centers of excellence to provide top-flight clinical care and innovative research as well as outreach and education programs throughout the United States.

Dr. Holloway sees most of her patients at University Hospital at VCUSM, dividing her time about 30/70 between general neurosurgery and functional neurosurgery. General neurosurgery encompasses a variety of surgeries to treat conditions ranging from carpal tunnel syndrome to degenerative spine disease to brain tumors. In functional neurosurgery, she explains, she “fixes things not seen on an X-ray in order to improve patient function.” In this area, she uses deep brain stimulation (DBS) to treat move-
ment disorders including PD and dystonia; she also performs temporal lobectomies as well as surgery on the trigeminal, vagus, and spinal nerves.

**Therapies Evolve along with Imaging Technology**

Improved imaging technology has advanced the surgeon’s ability to pinpoint target areas of the brain, improving both diagnosis and treatment. “In the ’80s, when I was in med school,” says Dr. Holloway, “everyone had CT [computerized tomography] scanning, but few had MRI [magnetic resonance imaging]. The field didn’t exist. Now, everyone has it.”

Reversing the brain’s underproduction of the neurotransmitter dopamine is key to controlling the rigidity, tremors, and bradykinesia (abnormally slow movement or mental function) that are symptomatic of Parkinson’s disease. In the 1960s, surgery was “in full bloom” as a form of therapy for symptoms of the disease, says Dr. Holloway. Then the discovery and subsequent approval by the federal Food and Drug Administration (FDA) of levodopa (L-dopa) shifted the focus back to medical management.

In the 1990s, surgery for PD had a resurgence, represented, in part, by a return to pallidotomy, a neurosurgical treatment used in the 1960s. In this procedure, the surgeon uses radiofrequency to destroy small sections of the globus pallidus, a section of the brain associated with movement disorders. Also in the 1990s, fetal tissue grafts were proposed as a potential therapy, an area that Dr. Holloway helped explore during a 1990 fellowship at the National Institutes of Health.

“But the trials failed to meet end point,” she says.

**Deep Brain Stimulation and Nex-Frame Offer Hope**

In 1997, neurosurgery took a giant step forward with the FDA’s approval of --- Continued on Page 50
Robert Eidus, MD ’74: PLEDGED TO THE REINVENTION OF FAMILY PRACTICE

Robert Eidus, MD ’74, seems to be in perpetual motion. In a career devoted to family medicine, he has held often-overlapping positions in academic medicine, managed care, hospital administration, consulting, quality assessment, and family practice.

He has been both a leader and an innovator in his own field. “I always seem to become affiliated with new or developing organizations,” says Dr. Eidus. “I like the challenge, and I like coming in on the ground floor.”

Family Medicine: A Tool for Reinventing Primary Care

Dr. Eidus was a member of the first four-year class at Rutgers Medical School, attracted by the new Department of Family Medicine and the opportunity to study with its founder, Frank C. Snope, MD. The department was grounded in the belief that primary care could be reinvented by returning to the model of patient-centered family practice. Dr. Snope, a pioneer in family practice reinvention, was later named emeritus professor of family medicine and community health at Robert Wood Johnson Medical School.

Instead of being taught by family medicine residents, who were relatively uncommon in the early 1970s, medical students worked closely with seasoned physicians at Hunterdon Medical Center and Muhlenberg Hospital during their family medicine rotation. Of all the specialists he met, says Dr. Eidus, “These doctors had the closest, most enduring relationships with their patients.”

Dr. Eidus completed his residency at Overlook Hospital, in Summit, a teaching affiliate of the Columbia College of Physicians and Surgeons, and then spent 11 years in academic medicine. “I kind of fell into it,” he says, “because I enjoyed teaching, and there was a paucity of faculty in the field.” Within four years, he was appointed chair of the Department of Family Practice and director of the Family Practice Residency at St. Joseph’s Hospital, in Paterson. In addition, he saw patients and served as a preceptor for residents at Overlook, including Paula Krauser, MA, MD ’78, clinical associate professor of family medicine and community health, RWJMS. “Bob Eidus was an amazing teacher, with an excellent eye — and ear — for detail,” she recalls.

Managed Care: The “Golden Era” and Beyond

Three decades later, in 2011, Dr. Eidus was elected president of the New Jersey Academy of Family Physicians. In his inaugural address, he reflected on his choice in the mid-1980s to move from academic medicine into managed care. “Along with many others from family medicine,” he said, “I mistakenly migrated to the managed care industry thinking that it was going to be the second reinvention of primary care.”

“We believed we could have a wider impact — an epidemiological effect — on health care by moving into managed care,” he added recently. “And for a short time, we did.”

For three years, Dr. Eidus served as vice president and medical director for New Jersey at U.S. Health-
care, where he was responsible for medical policy and medical quality. Subsequently, he became executive vice president and chief medical officer of ChoiceCare Health Plans, in Cincinnati, overseeing medical management for this 280,000-member HMO, with 3,000 participating physicians. One of his proudest achievements was leading both organizations to full, three-year accreditation by the National Committee for Quality Assurance (NCQA). Dr. Eidus remained active in NCQA, serving on the Review Oversight and Reconsideration Committees until 2002.

By 1995, he says, the “golden era” of managed care had faded. HMOs became profitable, were bought up by large insurance companies, and morphed into a specialist-benefiting structure. As doctors and patients became frustrated with the growing constraints of managed care, it was time for more effective and permanent reinvention.

**Entrepreneurship and Disease Management**

To meet this challenge, Dr. Eidus enrolled in a two-year executive MBA program at the Kellogg Graduate School of Business Management at Northwestern University, in Evanston, Illinois. Participants came from all professions, not only health care. “That was good,” he says. “It provided a different perspective on strategic planning and how to treat the customer.”

Dr. Eidus then set off in new directions: disease management and entrepreneurship. He was named president of Corning Franklin Health, a company that specialized in disease management. This area of health care focuses on optimizing health care for people with serious, complex illnesses including cancer and HIV/AIDS; premature birth; and chronic diseases such as asthma. Patients with these conditions constitute approximately 5 percent of the patient population, but their medical care drives an estimated 60 percent of health care costs.

“This model has been taken to another level by RWJMS alumnus Jeffrey Brenner, MD ’95,” says Dr. Eidus. “Dr. Brenner has earned national acclaim for his pioneering work in disease management in Camden, New Jersey.”

Dr. Eidus went on to serve as president and CEO of Innovative Health Solutions (IHS), an independent disease management company that focused on women’s health. Two years later, he converted IHS into Informed Health Decisions, a private company, which he led as president and CEO.

On the threshold of the new millennium, Dr. Eidus evolved again, founding Eidus Health Solutions (EHS). An independent consulting firm, EHS offers experience and expertise in areas including evidence-based medical care, evaluation of disease management, and medical leadership.

He also became medical director of the Einstein Practice Plan, a 280-physician multi-specialty group practice in Philadelphia. While at Einstein, he was principal investigator on Take Care to Learn, funded by a $350,000 grant from the Robert Wood Johnson Foundation to study and quantify the level of asthma management in primary care practices.

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Robert Eidus, MD '74:
PLEDGED TO THE REINVENTION OF FAMILY PRACTICE

In DBS for movement disorders, the surgeon generally implants electrodes on one or both sides of the globus pallidus, the thalamus, or the subthalamic nucleus. An electrical lead from a battery pack, similar to a pacemaker, delivers impulses to the target area of the brain. Once in place and functioning, the system reduces the severity of PD-associated movement disorders by disrupting abnormal nerve signals. Unlike techniques such as pallidotomy, DBS does not involve destruction of brain tissue, and its effects are reversible and adjustable.

For several decades, neurosurgeons have been searching for effective treatment options for movement disorders. Dr. Holloway has contributed to this field by developing deep brain stimulation (DBS), a procedure that involves the placement of electrodes in the brain to stimulate specific regions and alleviate symptoms. DBS was initially developed for the treatment of Parkinson's disease (PD) and has since been applied to other neurological conditions.

Deep brain stimulation (DBS) is performed by a neurosurgeon who inserts electrodes into the brain through a small incision in the skull. The electrodes are then connected to a small battery pack, called the pulse generator, which is implanted under the skin of the neck or chest. The system is designed to be adjustable, allowing for fine-tuning of the stimulation to optimize symptom control.

A problem solver by nature, Dr. Holloway wanted to create a better device. She served as the lead designer on a multidisciplinary team that developed the NexFrame, a frameless, lightweight mechanism with accuracy that is equivalent to that of the halo. It is about the size of a take-out coffee cup, and attached to it are the surgeon’s tools. Like the halo, the NexFrame device is affixed to the skull, but patients can freely move their head and neck, guiding the team by providing feedback.

Neurosurgeons in 20 medical centers across the United States are using NexFrame to relieve the symptoms of patients with PD and other neural conditions. Other applications for the device are in the pipeline. In one example, Dr. Holloway is using NexFrame-assisted DBS to treat depression by turning off discrete areas of the brain’s limbic system.

Not only is Dr. Holloway intrigued about the brain’s inner realm, she is passionate about the world around her. She and her husband, Felix Tapawan Garcia, love spending time with their 12-year-old son, Luke, pursuing a host of outdoor sports, including mountain biking and skiing in the Blue Ridge Mountains.

Robert Eidus has consistently participated in research through EnquireNet, a nationwide, practice-based research network, and through the division of research in the Department of Family Medicine and Community Health at RWJMS. Much of the research aims at measuring the value to patient, physician, and practice of the “patient-centered medical home” — a key concept in the reinvention of primary care.

“Bob is a great resource,” says Alfred F. Tallia, MD ’78, MPH, professor and chair, Department of Family Medicine and Community Health. “The diversity of his positions as a health insurance executive, a member of NCQA, a consumer, and a physician brings wisdom to everything he does.”

In 2002, Dr. Eidus’s career came full circle, when he established a solo practice that follows the patient-centered medical home model — an integrated, team approach to patient care. In addition to Dr. Eidus, the staff includes a family nurse-practitioner, a health coach, a patient care coordinator for the sickest 2 percent of his patients, and a part-time psychiatric nurse-practitioner. “Patients are the other partner in the practice,” says Dr. Eidus. “Evidence shows that people who are involved in their own care have better outcomes, so I prefer to work in partnership with my patients.”

In early 2012, he merged with practices in two neighboring counties, creating Vanguard Medical Group. The physicians, all primary care specialists, are aligned philosophically through their training in family medicine. “Our patients range in age from two months to 96 years,” says Dr. Eidus, who enjoys caring for patients of all ages — and, in a few cases, four generations of the same family. “Health is more than the absence of disease. If you know the family and understand its lifestyle and dynamics, you can be much more helpful to your patients.”

“I enjoy every part of it,” he adds. “I’m very tired by the time I close up on Friday, but I take time to recharge and always look forward to Mondays. I would never want it to be the other way around.”