by **Jennifer Nachbur** | photographs by **Mario Morgado**

A TALE OF TWO NEUROSCIENTISTS

A DEEP PERSONAL FRIENDSHIP AND SHARED INTEREST IN NEUROSCIENCE LED TWO LONGSTANDING CHAIRS THROUGH TWO DECADES OF COLLABORATION AND THE MERGER OF THEIR DEPARTMENTS.

Along the bays and beaches of the Long Island shoreline, a vibrant mix of land and sea creatures captivated the attention of a little boy so deeply that he knew by the age of seven he would one day be a biologist. A couple of hours to the north, in a town east of Hartford, Conn., the son of a widowed Irish maid grew to be an accomplished athlete who loved coaching children in basketball and other sports. Some forty years later, their paths would cross in Burlington, Vt., when they began laying the foundation for what would, in 2012, become the Department of Neurological Sciences at the University of Vermont.

Animals still figured prominently in the mind — and career — of Rodney Parsons, Ph.D., when he arrived at UVM in 1967. Fresh from a National Institutes of Health (NIH) postdoctoral fellowship at Columbia College of Physicians and Surgeons, coming to Vermont was a kind of homecoming for the Middlebury College alumnus and his wife. He'd followed through on his early interest, and received a biology degree, and then moved clear across the country to Stanford for graduate school before returning to his native New York. The third faculty member recruited to the Department of Molecular Physiology and Biophysics by then-chair Norman Alpert, Ph.D., Parsons specialized in neuromuscular function. The common garter snake provided an optimal model for studying the molecular activity of this function, so Parsons ran ads in the local paper, got a permit to catch them, and enlisted the help of his children and neighbors' kids to find these research "subjects" in order to study the synaptic properties of two types of muscle fibers.

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> **— Rodney Parsons, Ph.D.**

Things changed, administratively, in 1979, when Parsons became the chair of the then-Department of Anatomy. While medical, physical therapy, and neuroscience students already had an anatomy course, he designed, with Alpert's permission, an eight-credit, two-semester integrated anatomy and physiology course to teach non-medical, non-physical therapy students, including those enrolled in the two-year nursing program, and medical technology and graduate technology programs. Physiology and Anatomy and Neurobiology faculty each taught half the course. Parsons and Steven Freedman, Ph.D., had previously co-designed the integrated medical student neuroscience course used at the College until the launch of the Vermont Integrated Curriculum in the early 2000s.

"There was only limited research in the anatomy department back in the seventies," says Parsons, and there were only about five faculty and one-and-a-half administrative staff in the department when he became chair. It was then that he began to build the theme of neuroscience, changing the department name to Anatomy and Neurobiology. Originally he promised then-Dean William Luginbuhl, M.D.,

Longtime colleagues, collaborators, and close friends Robert Hamill, M.D., left, and Rodney Parsons, Ph.D.

THE **PARSONS** FILE

Rodney Parsons, Ph.D.

ACADEMIC APPOINTMENTS

Professor of Neurological Sciences, 2013–present

Professor and Co-Chair, Department of Neurological Sciences, 2012–2013

Professor and Chair, Department of Anatomy and Neurobiology, 1979–2012

Professor of Physiology & Biophysics, 1973–1979

Assoc. Professor of Physiology & Biophysics, 1969–1973

Assistant Professor of Physiology & Biophysics, 1967–1969

Postdoctoral Fellow in Physiology, Columbia University, National Institutes of Health, 1965–1967

EDUCATION

1965: Ph.D., Physiology, Stanford University, Stanford, California

1962: A.B., Biology, Middlebury College, Middlebury, Vermont

- University Scholar, 1990—1991
- Director of the COBRE Center for Neuroscience Excellence grant

AWARDS AND HONORS

1989–1996 Jacob Javits Neuroscience Investigator Award

1965–1967 National Institutes of Health Postdoctoral Fellowship in Physiology, Columbia University

SELECTED RECENT PUBLICATIONS

The cardiac sympathetic co-transmitter galanin reduces acetylcholine release and vagal bradycardia: implications for neural control of cardiac excitability. *Journal of Molecular Cell Cardiology,* 2012.

Autonomic dysfunction and plasticity in micturition reflexes in human a-synuclein mice. *Developmental Neurobiology,* 2012.

Pretreatment with nonselective cationic channel inhibitors blunts the PACAP-induced increase in guinea pig cardiac neuron excitability. *Journal of Molecular Neuroscience,* 2012.

Galanin expression in the mouse major pelvic ganglia during explant culture and following cavernous nerve transection. *Journal of Molecular Neuroscience,* 2012.

Somatic ATP release from guinea pig sympathetic neurons does not require calcium-induced calcium release from internal stores. *American Journal of Physiology Cell Physiology,* 2010.

that he'd serve in the chair's position for five years. His first recruit was the late Bruce Fonda, M.S., a lecturer in anatomy and neurobiology who was trained by longtime anatomist Dallas Boushey, who was set to retire after 50 years' service. Also among Parsons' early hires was Jerome Fiekers, Ph.D., his former postdoctoral fellow. Over the next twenty years, Parsons hired nearly twenty more faculty members, many of whom remain in the department today. Among them was Cynthia Forehand, Ph.D., professor of neurological sciences and current interim dean of the Graduate College, who took on responsibility for increasing the scope of the medical student neuroscience course after Freedman's departure from UVM.

Parsons chaired the search committee that brought former Chair of Neurology Robert Hamill, M.D., to the College in 1993. Parsons' wife had recently passed away, and the two became close friends, with Parsons often serving as Hamill's "chef" during his Burlington visits. They had much in common, including the loss of their fathers in early childhood, but Hamill's path to UVM was longer, and originated from an unexpected starting point.

"I wasn't even going to go to college," says Hamill, whose family had emigrated from Ireland before his birth. His father later became ill and passed away while Hamill was still a boy. He and his mother, who worked as a maid near their home in Manchester, Conn., were what he describes as poor. But despite his financial disadvantages, Hamill had two things going for him: he was a skilled athlete, and he was bright. Despite his mother's urgings to learn a trade (he studied auto mechanics), his high school guidance counselor had other plans for him.

"He gave me Middlebury, Williams, Brown, and Worcester Polytech catalogs," says Hamill, who told the counselor, "I really can't go to any of these. I wouldn't fit in." The counselor didn't let up, and through conversation teased out that Hamill would consider becoming a physical education teacher. So he was steered toward Springfield College — the birthplace of basketball, volleyball, exercise physiology and the YMCA. Thanks to scholarships from his hometown and the college, Hamill was able to attend. "It really was a life-changing experience," he says. At Springfield, he mastered anatomy and physiology, biomechanics, and — critical to his future path — the brain's role in movement. After two years, Hamill had set his sights on graduate school, but one fateful summer afternoon, a friend's father — a physician — pulled him aside and asked him to consider medical school. The suggestion clicked, and he switched to pre-med. His senior year, he was accepted to Wake Forest College's Bowman Gray School of Medicine and, despite more financial hurdles, the dean of students at the school arranged for a full scholarship. Hamill was on his way.

At Wake Forest, Hamill fell in love with both his wife — whom he married his second year — and with neurosciences and neurology. He spent three years in the Navy after medical school, then completed a two-year residency in internal medicine at Strong Memorial Hospital in Rochester, N.Y. A three-year neurology residency and a four-year NIH research fellowship in developmental neurobiology led him to New York City, where he studied with world-class clinical and basic science mentors at Cornell, and honed his research expertise in Parkinson's disease.

The Hamill family moved to Rochester, N.Y., in 1980, where he served as a professor of neurology at the University of Rochester. A clinician, teacher and researcher, he ran the Alzheimer's Center and headed the neurogerontology division, as well as neurology at Monroe Community Hospital. He had built a research group of about 20 people and enjoyed functioning as their "coach," hailing back to his original career aspirations at Springfield. In the early 1990s, he reached a turning point in his career; he'd been asked to run the University's Center on Aging, and colleagues were submitting his name for chair positions at other institutions. Then he received a letter from UVM. With his deep love of his native New England, the offer from UVM, which included service leadership at the then Medical Center Hospital of Vermont, was the only one he seriously considered.

> "What defines Rod Parsons as a chair is his outstanding support of his faculty in all aspects of their careers."
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> **— Cynthia Forehand, Ph.D.**
> Interim Dean, UVM Graduate College

"When I came here, I think there were six of us," says Hamill, whose new department included pediatric neurologist E. Stanley Emery, M.D., who had been acting chair; Rup Tandan, M.D., recent interim co-chair of neurological sciences Timothy Fries, M.D., Joseph McSherry, M.D., Ph.D., and the late Antonio Gomez, M.D. In addition, the late Herbert Martin, M.D., who had retired, was still seeing patients part-time. "There was limited clinical research and there weren't any NIH grants when I came," Hamill says.

Hamill's arrival coincided with the early stages of the founding of what would become Fletcher Allen Health Care, and additional recruitment plans were halted. "Those were some challenging years," admits Hamill, who would do four months of hospital service each year, and ran the clinics — M.S. and Stroke — and started a Parkinson's clinic to keep the department viable.

The concept for a translational science department grew out of Hamill's and Parsons' close camaraderie. "We built our two departments together with common interests," says Parsons, who recalls the evolution of the idea beginning with him, Hamill and John Evans, Ph.D. — then executive dean of the College of Medicine.

"We thought of it as a mechanism to increase recruitments, to build bridges," Parsons shares. The two knew that heightened competition and the need to do more translational work supported their concept, and they wanted to develop an opportunity for basic science and clinical faculty to talk to each other. As a result, they brought faculty member Margaret Vizzard, Ph.D., and later Felix Eckenstein, Ph.D., on board in Hamill's department, and Rae Nishi, Ph.D., in Parsons'.

"Basic science was small here," says Parsons, who recognized the value of his and Hamill's collaboration from both a research perspective, as well as in the realm of integrated education. "Neuroscience evolved out of other basic science disciplines," he adds. As the field grew, he recruited to meet correlating needs, seeking out researchers who could also teach. Among them were Drs. Gary Mawe, Cynthia Forehand, Diane Jaworski, and Victor May. Ellen Black, Ph.D., had been Parsons' graduate student before he hired her to teach anatomy. After Freedman left, Parsons increased the scope of Forehand's responsibilities to include the College's neuroscience course.

Hamill's and Parsons' translational science-building theme migrated into the curriculum as well. When Hamill arrived, the neurology rotation was an elective, not mandatory. That status shifted when a movement led by graduating medical students pushed for the addition of a neurology clerkship. The development of the Neural Science course in the Vermont Integrated Curriculum also augmented the role of neurology faculty, and Hamill expanded his faculty, clustering them around the areas of systems neuroscience and neural development to enhance medical student education.

The two chairs' joint work also had a significant effect on research at the College.

"The NIH COBRE grants [Center of Biomedical Research Excellence] have really been instrumental in strengthening the concept of cross-campus neuroscience, and have formed support for the importance of having a translational science program," he says. While Parsons and Forehand were the Neuroscience COBRE principle investigators, the translational core was run jointly by Hamill, whose combined clinical-basic science background fit the role perfectly, and Felix Eckenstein.

"I'm proud of what the COBREs have done. They've supported a lot of

THE **HAMILL** FILE

Robert Hamill, M.D.

ACADEMIC / CLINICAL APPOINTMENTS

Professor of Neurological Sciences Emeritus, 2013 to present

Professor, Department of Neurological Sciences, 2012–2013

Professor and Chair, Department of Neurology, 1993–2012

Physician Leader — Neurologist-in-Chief, Neurology Health Care Service, Fletcher Allen Health Care and University of Vermont Medical Group, Burlington, Vt., 1995–2012

Professor of Neurology, Neurobiology and Anatomy, and Medicine, University of Rochester School of Medicine and Dentistry, Rocheser, N.Y., 1980–1993

EDUCATION

1964–1968: M.D. Bowman Gray School of Medicine, Wake Forest University, Winston-Salem, N.C.

1960–1964: B.S., Springfield College, Springfield, Mass.

- 1996–2012: Best Doctors of America
- Springfield College Distinguished Alumnus Award, 2012

AWARDS AND HONORS

Teacher Investigator Development Award, NIH, (NINCDS), 1978–1980

Jordan Research Fellowship, National Paraplegia Foundation, 1977–1978

National Research Service Award, NIH (NINCDS), 1976–1978

Alfred P. Sloan Foundation Fellowship, 1975–1976

SELECTED RECENT PUBLICATIONS

Predictors of cognitive outcomes in early Parkinson disease patients: The National Institutes of Health exploratory trials in Parkinson disease (NET-PD) experience. *Parkinsonism Related Disorders,* 2010.

Caffeine and progression of Parkinson's disease. *Clinical Neuropharmacology,* 2008.

A Pilot Clinical Trial of Creatine and Minocycline in Early Parkinson's disease — 18 month results. *Clinical Neuropharmacology,* 2008.

Subclavian artery stenosis causing transient bilateral brachial diplegia: an unusual cause of anterior spinal artery syndrome. *Journal of Neurosurgery Spine,* 2008.

At the College of Medicine Commencement in May, Robert Hamill, M.D., standing at left, listened while his emeritus citation was read by his friend and colleague Rodney Parsons, Ph.D., at lecturn. Dean Rick Morin observed at right.

young faculty across the campus," says Parsons, whose role as chair has been similarly focused. "The greatest thing has been watching people grow and exceed expectations — Cindy Forehand becoming a major support for the institution. Gary Mawe, who has soared. The development of a University-wide graduate program. It's been very satisfying."

"What defines Rod Parsons as a chair is his outstanding support of his faculty in all aspects of their careers," says Forehand. "He supported my development as a scientist through mentoring and reviews of my grant applications and supported and encouraged my interests in education and administration."

Along with the construction of the research enterprise, Hamill was busy building the clinical arm and, in particular, a community neurology program. Over the years, he developed a close relationship with Neurology Associates of Vermont, a private practice group near campus originally headed by the late Kenneth Ciongoli, M.D. He brought the physicians from the practice into his department and initiated a shared (50/50) faculty position. When Ciongoli became ill, four of Hamill's faculty members picked up his patients. The department now manages the Associates office.

"The goal is to continue to recruit general neurologists to the community neurology program," explains Hamill, who adds that the connection provides excellent educational opportunities, allowing students and residents to experience the environment of a private practice.

"I'm going emeritus this year," says Hamill, "and we had four graduates go into neurology — the clerkship, which is now a little over three weeks long, has been a big boost." Most schools, he adds, only have about two percent going into the field.

His department's research productivity has been equally successful. "For a department of our size, the amount of extramural funding per faculty member is very high," says Hamill. One of the research achievements of which he's most excited is the Michael J. Fox grant, which is headquartered at UVM and led by James Boyd, M.D., a mentee of Hamill whom Hamill proudly shares is now both nationally and internationally known in the field of Parkinson's disease. "I now work for him — it's a joy," exclaims Hamill.

That's a feeling shared by Boyd. "From my first days of residency to today, Dr. Hamill has been the single greatest influence in my career development," he says. "Discussing neuroscience with students and residents, Dr. Hamill has the excited expression of a child in a toy store. His passion for the field is inspiring and infectious. It has been through his mentorship and by his example that I have become the neurologist and clinical researcher that I am today."

Now 28 years past his originally committed service as chair, Parsons counts running the Anatomical Donor Program with limited resources ("it was very smart to modernize and transition it to where it is now") and former student Amy McDermott's first-ever-in-the-world recording of neuronal synaptic currents from bullfrog sympathetic ganglion cells among his career "highs."

"The hardest part of my years as chair was when we lost Bruce Fonda," he admits. "He was a special person, and an amazing teacher. It was a loss for us all."

Hamill's early struggles are far behind him, but not forgotten. Last year, his alma mater Springfield College honored him as an outstanding alumnus. Now officially emeritus as of the Class of 2013 Commencement, he says "It's a great feeling to start with a department of six and see where we've been able to grow together."

Indeed, the vision he and Parsons launched more than fifteen years ago has been realized. They engineered a proposal to merge their departments into the Department of Neurological Sciences. It was approved by the UVM Board of Trustees in 2012 and, in May of this year the newly recruited Gregory Holmes, M.D., took the helm. Hamill and Parsons couldn't be more proud.

"The uniqueness of this department — it spans an educational realm from undergraduates to residents — makes serving as chair challenging," says Parsons. "We're glad to leave our legacy in such capable hands." VM

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> **— James Boyd, M.D.**
> Assistant Professor of
> Neurological Sciences

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