Center for Molecular Medicine concentrates top biotech research in new, state-of-the-art facility

The University of Nevada, Reno and the University of Nevada School of Medicine ushered in a new era for research with the grand opening of the Center for Molecular Medicine on Aug. 16.

The 140,000 square-foot center, the first new basic science research facility to be built at the School of Medicine in nearly 30 years, houses research teams from across the medical school and serves as headquarters for the Whittemore Peterson Institute for Neuro-Immune Diseases and the University of Nevada, Reno Division of Health Sciences Center for Healthy Aging. It represents the next tangible step in solidifying the health sciences facilities on the north end of the Reno campus.

The Center for Molecular Medicine cost approximately $77 million and the majority of the funding—$60 million—was generated through the efforts of researchers from across the University of Nevada, Reno, including the School of Medicine. A $12 million appropriation from the Nevada State Legislature and state funds earned through the University’s research program in support of its infrastructure. This funding reflects the growing significance of the University’s overall research portfolio.

The entire facility is a center for workforce training in the life sciences and a resource to attract biotech industries while expanding the state’s ability to pull in private sector investments. The focus of the Center for Molecular Medicine will be biomedical and translational research providing new insights into the fundamental questions of health and disease.

Fourteen School of Medicine basic scientists are moving their research laboratories into the facility this fall to ultimately occupy 70,000-square-feet of the building, or the entire west wing, which will include a state-of-the-art vivarium on the first floor. The Whittemore Peterson Institute will have 21,000 square feet on the second and third floors of the east wing and the Center for Healthy Aging will occupy about 6,650 square feet on the east wing’s first floor. The east wing will also house a 96-person capacity auditorium, two large meeting rooms and shared food service area.

Dr. Sanford Barsky, representing the pathology department in the Center for Molecular Medicine, sees the facility as giving the School of Medicine a greater ability to compete at the national level for very limited resources.

“We need a level playing field with state-of-the-art facilities and the Center for Molecular Medicine gives us that,” said Barsky, department chair, whose research interests focus on the molecular mechanisms of inflammatory breast cancer and lung carcinoma metastasis.

He said the center provides the medical school a more robust research presence and will help integrate that research component into its teaching and patient care missions.

Barsky also sees an economic boost resulting from this building. He will double the size of his lab and have a post doctorate researcher, resident scientists, medical students and residents and undergraduates working with him.

“It is amazing with high unemployment and an economy in the doldrums, to muster the support needed for this building,” he said.

Greg Pari, the new chair of microbiology and immunology, said the new building will help attract the best graduate students to the medical school’s research departments.

“Grad students do the bulk of the work and are our most valuable resource. This building will allow more interaction between grad students, who are the engine that drive the research machine,” he said. The larger facility provides more space and will allow more grad students to be hired as funding becomes available.

Pari shares lab space with Subhash Verma, of his department, and Barsky, because all three research various aspects of cancer. Pari said he is also looking forward to closer collaboration with Dr. Wei Yan, of physiology and cell biology, because they share many of the same procedures in their respective research.

The pharmacology department moved five scientists into the Center for Molecular Medicine, including Cherie Singer ’93, whose research looks at the causes of asthma. Her lab was one of the first to determine that microRNA could turn off genes during inflammation in airway muscle.

Singer is excited to be one of the junior investigators in the new facility because new equipment will help take her research to the next level.

“I will be able to significantly advance my research with access to this new equipment and technology,” she said. The gene expression capabilities, additional flow cytometry equipment and an expanded vivarium will help her measure the pulmonary function in mouse models.

“This building represents a different mindset for scientists here,” Singer said. “We are hoping people will come, visit and learn what we do.” The facility’s auditorium and meeting spaces will be able to host conferences and seminars.

After 15 years in the same office and lab, Brian Perrino, of physiology and cell biology, thinks the separation of hot, loud equipment from lab and office spaces will create a more friendly and comfortable work space for his research on the molecular mechanisms that
maintain smooth muscle contractile responses in the digestive tract.

“We have dedicated work areas for experimentations and procedures and separate, quiet office spaces for data analysis and grant writing,” he said.

He said the break-out rooms and common areas will promote synergy and communication between lab personnel. “You’ll be able to get a different approach and perspective to your research problems from someone else.”

The building’s design will allow researchers the capability to adapt to the direction of research and be more flexible, according to Perrino.

In all, School of Medicine basic scientists will use the center and its facilities to research emerging infectious diseases, herpes viruses, breast cancer, muscular dystrophy, preterm birth, cardiac electrophysiology, the role of ion channels in the regulation of smooth muscle cells, asthma, neural control, male infertility, stroke and neurodegenerative diseases, as well as gastroparesis. Additional research in chronic fatigue syndrome and fibromyalgia is being conducted by the Whittemore Peterson Institute, which will also provide clinical care to patients with those conditions.

The Whittemore Peterson Institute’s comprehensive research program is focusing on neuroimmune diseases and the biology of the new human retrovirus, XMRV. By bringing talented researchers and clinicians together to solve critical questions about complex diseases, the institute will not only bring answers to patients, but will also help to create new biomedical industries within the state of Nevada.

“This new building will place scientists and physicians in a uniquely collaborative environment encouraging the rapid translation of basic and clinical research into vital patient treatments,” said Annette Whittemore, the institute’s president and founder.

The Center for Healthy Aging will provide interdisciplinary clinical assessments, teaching and outreach opportunities to meet a variety of health care and wellness needs of aging adults and their families and will promote the study and research of geriatric medicine and gerontology.

The Center for Molecular Medicine will create new horizons for biotechnical research collaboration and expand the breadth of science in Nevada. Technology in the building may become available for collaboration with private industry, which does not currently exist.

The Center for Molecular Medicine will provide a unique resource for aging adults, their caregivers and families to understand how best to adapt to the aging process.

The center will be staffed by a team of University professionals representing diverse disciplines including physicians, nurses, social workers, psychologists, audiologists, speech therapists and others who will assess client needs and recommend strategies for optimal aging.

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The Center for Molecular Medicine will create new horizons for biotechnical research collaboration and expand the breadth of science in Nevada. Technology in the building may become available for collaboration with private industry, which does not currently exist. The center aims to become a resource for Nevada to attract biotech industries, which will diversify and strengthen Nevada’s economy.