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Vanderbilt Medical Center

New lab set to enhance brain disorders research

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Randy Blakely, Ph.D., right, and Discovery Lecturer Eric Nestler, M.D., Ph.D., at the opening of the Vanderbilt Laboratory for Neurobehavior. (photo by Anne Rayner)



Jeff Balsler, M.D., Ph.D., left, and Harry Jacobson, M.D., right, were among those on hand for the opening of the Vanderbilt Laboratory for Neurobehavior. (photo by Anne Rayner)
by Leslie Hast

Vanderbilt Medical Center has opened a “next-generation” laboratory devoted to advancing the understanding and treatment of diverse brain disorders including autism, ADHD, schizophrenia and Alzheimer's disease.

The Vanderbilt Laboratory for Neurobehavior, which officially opened Jan. 15, allows scientists to use mouse and rat models to make clear the complex roles of genes, as well as the impact of drugs, in how the brain supports learning, memory, attention, emotion and social behavior.

"Through the careful evaluation of mouse and rat behavior, we hope to achieve a more sophisticated understanding of how genes and environment interact to establish normal behavior as well as impart risk to common brain diseases," said Randy Blakely, Ph.D., director of the Vanderbilt Center for Molecular Neuroscience, which oversees the new research facility.

The 9,000-square-foot lab, located above the Vanderbilt University Institute of Imaging Science, dramatically increases the space dedicated to neurobehavioral research in animal models at Vanderbilt, Blakely said.

The University provided \$7 million for construction of the facility, which is receiving ongoing support from the Center for Molecular Neuroscience, the Vanderbilt Kennedy Center for Research on Human Development and the National Institutes of Health.

To date, VMC has received \$38 million from the NIH and private foundations to support neurobehavioral research in rodents.

"So (Vanderbilt's investment) in this facility has a great payoff," said Jeff Balser, M.D., Ph.D., dean of the Vanderbilt University School of Medicine and associate vice chancellor for Health Affairs.

"The Laboratory for Neurobehavior represents a truly significant addition to our research infrastructure," said Elisabeth Dykens, Ph.D., interim director of the Vanderbilt Kennedy Center and professor of Psychology. "The lab design and equipment, which includes powerful video software, will enable sophisticated studies of rodent social behavior not previously possible."

"This testing facility is really the next piece in the genome project, one that allows us to see how genetic differences lead to altered behavior and drug responses," Blakely added. "We first identified brain genes and then learned how to manipulate and study them in animal models. Those efforts took us a long way, but without a facility like this one, with its highly controlled environment and sophisticated testing equipment, the impact of our efforts for human disease could not be realized."

At last week's dedication ceremony, Harry Jacobson, M.D., vice chancellor for Health Affairs, said this facility was the result of strategic planning a decade ago.

"One of the outcomes of that was the decision that Vanderbilt was going to make a major investment in neuroscience and that we were going to find ways, multi-disciplined ways, to really be a leader in a very important field, and the amazing thing is that we have," Jacobson said. "The whole world knows about neuroscience and Vanderbilt, and I couldn't be more proud of that."

Preceding last week's dedication was a Vanderbilt Discovery Lecture given by Eric Nestler, M.D., Ph.D., chair of Neuroscience at Mount Sinai School of Medicine.

Nestler reported how the transcription factor delta-FosB contributes to addiction by regulating gene expression in the brain's reward pathways. The work could lead to new, more effective treatments for addiction.