In an unusually extensive collaboration between an academic institution and a drug maker, Vanderbilt University will partner with Johnson & Johnson to develop new drugs to treat schizophrenia.

The Tennessee university will receive about $10 million from J&J over the next three years, plus as much as $100 million in additional payments if it meets certain research milestones. The deal is scheduled to be announced Friday.

Universities have worked on research projects with pharmaceutical companies for years. A typical setup involves a drug maker funding a university's basic scientific research in exchange for first rights to buy any commercially promising compounds that result.

Companies have also bought or licensed compounds from academics even if they didn't fund the initial research, as was the case with Remicade, now a blockbuster J&J biologic treatment for rheumatoid arthritis whose initial discovery was made by scientists at Imperial College London.

But researchers unconnected with the project said the Vanderbilt-J&J partnership appears to be more extensive than historical university-industry collaborations.

Under the agreement, Vanderbilt's researchers won't just identify promising molecules. Instead, they will develop drugs to the stage where they are ready for human testing, working, for example, to make a prospective medicine less toxic. This process, known as "drug optimization," is usually performed by the biotechnology or pharmaceutical companies themselves.

Jeffrey Conn, a pharmacology professor who heads Vanderbilt's drug-discovery program and will lead the J&J-funded research effort, said he and his colleagues have identified hundreds of molecules that show promise of developing into a new class of drugs for treating schizophrenia, a serious mental illness in which individuals suffer from detachment from reality and other severe symptoms.

The partnership, which represents a small outlay for J&J, comes amid growing interest among drug companies and some universities in working together more closely. The pharmaceutical industry is being battered by generic competition as it struggles to develop new drugs, while academic researchers have been competing for stagnant federal research funding.

But the J&J-Vanderbilt partnership also coincides with growing worries that universities are becoming too motivated by money. Dr. Conn said he is mindful of the potential for conflicts of interest. He pledged to publish his scientific findings whether or not they benefit J&J.
Academia and the drug industry can both benefit from working together, proponents say. As Big Pharma struggles to refill its product pipeline and biotech companies face financing challenges, fostering more extensive collaboration with universities may be a more efficient way for drug makers to usher new medicines to market.

For their part, academic institutions want more of their research to have a real public-health benefit.

A government-funded "molecule library" established in 2004 has allowed academic researchers to comb through thousands of potential compounds -- much as drug companies search through proprietary libraries -- to discover research leads, says Thomas Insel, director of the federal National Institute of Mental Health.

Increasingly, universities are considering, or have already established, centers specifically geared toward drug development. Vanderbilt's Dr. Conn left Merck & Co. to head Vanderbilt's Center for Drug Discovery five years ago. He now has a staff of about 30 chemists and biologists, many of them hired from industry.

Though it has faced some regulatory setbacks, the research pipeline of J&J's pharmaceutical unit is considered among the most robust in the industry. But J&J has struggled to find new psychiatric drugs since Risperdal, its big-selling schizophrenia treatment, went off patent in 2008.

Invega, its successor drug to Risperdal, has had disappointing sales.

Write to Shirley S. Wang at shirley.wang@wsj.com