improve the prevention, diagnosis and treatment of neuropsychiatric and neurodegenerative diseases for generations to come, while helping us to achieve our business goals.

Across neuroscience, our researchers are exploring the emerging science in synaptic plasticity and cellular resilience, with an emphasis on developing novel therapeutics for the treatment of severe mood disorders and neurodegenerative dementias. Our goal is to leverage breakthrough technologies in imaging, genomics and associated biomarkers to provide early disease diagnostics and patient management programs.

Along with a strong commitment to our internal research groups, we are dedicated to partnering with individuals and companies that share our vision and want to work together to build the neuroscience solutions of tomorrow. We believe that partnerships are essential to drive change, innovation and transformation, and we are committed to ensuring the success of our collaborations.

Whether you are an academic scientist working on an innovative concept, or a biotechnology or pharmaceutical company in search of a development partner, we welcome your inquiries. We look forward to learning more about your interests and opportunities for collaboration.

Husseini Manji, M.D., F.R.C.P.C.
Global Head, Neuroscience
JANSSEN RESEARCH & DEVELOPMENT, LLC

Partnering to Build Neuroscience Solutions of Tomorrow

The impact of neuropsychiatric and neurodegenerative diseases on our society is staggering. An estimated 475 million people worldwide have dementia; schizophrenia affects approximately 26 million people globally, and more than 350 million people around the world have depression. At Janssen, we are deeply committed to these patients and to the healthcare professionals who care for them. Our goal is to enhance a culture of innovation and bring forth new treatments for those in need.

We are united and energized by one mission – discovering, developing and delivering differentiated medicines that address the most serious unmet medical needs of our time.

Our strategy is to harness the best science in the world, whether from our own laboratories or through strategic relationships and collaborations with academia, biotech and other pharmaceutical companies.

Our priorities are Alzheimer’s disease and mood disorders, and we continue our legacy work in schizophrenia. In order to succeed in these areas, we recognize that innovation cannot be limited to our scientists and technology experts alone. Collaboration with scientists around the globe will drive the types of discoveries that will ultimately improve the prevention, diagnosis and treatment of neuropsychiatric and neurodegenerative diseases for generations to come, while helping us to achieve our business goals.

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PARTNERING WITH THE NEUROSCIENCE TEAM

Janssen’s Neuroscience organization provides comprehensive scientific and business expertise.

We have successfully established many partnerships through creative and innovative deal structures, and we are continuously seeking new ways to collaborate in our core areas of interest, including:

- Licensing and acquisition opportunities for therapeutics against novel targets
- Academic partnerships where novel discoveries have revealed high potential targets for therapeutic or diagnostic development
- Public-private partnerships and collaborations to advance therapeutics, clinical trials and biomarker programs
- Opportunities to license out and reposition selected compounds in our neuroscience pipeline
- Other innovative business structures, such as venture investments, startup companies, option deals and risk-sharing partnerships

Our global presence and cross-business portfolio provide us with the flexibility to build strong relationships for many collaborative opportunities in both established and emerging markets.
In emerging markets, our vision is to harness growth, expand businesses and enable the delivery of quality medicines. We continue to build our presence in Asia Pacific, Latin America, Europe, the Middle East and emerging markets by establishing R&D activities and expanding our sales and marketing operations. We welcome opportunities to develop partnerships with companies in emerging markets that want to leverage their innovative products and technologies. Our capabilities include global development programs, world-class manufacturing of biologics and small molecules, and strong commercialization entities that market our products in more than 175 countries. We are part of the most broadly based health care company in the world, yet our decentralized structure assures that we remain focused on the markets in every therapeutic and geographic area that we serve.

Each year, the Johnson & Johnson Family of Companies enter into more than 150 collaborations with outside organizations. On average, Janssen Pharmaceutical Companies license more than 50 products and platform technologies each year. Janssen’s collaborative work involves research agreements, product licenses, joint ventures, co-marketing arrangements and venture investments. Staff from our Johnson & Johnson Innovation teams lead these efforts.

Janssen is committed to making relationships work for the benefit of patients around the world.
Strategically Located to Foster Collaboration

As part of the Johnson & Johnson Family of Companies, we believe that the best way to move innovative solutions forward is through collaboration and idea exchange. To advancing this belief, Johnson & Johnson opened Innovation Centers in major science and technology hubs throughout the world to focus on early-stage partnerships.

Our Innovation Centers in Boston, California, London and Asia Pacific house science and technology experts—including senior, experienced neuroscientists—who are active members of their scientific communities. They are working to identify and bring forward early-stage collaborations on a local basis in areas that are of interest to our company.

Each regional center also has broad capabilities and flexibility to negotiate and customize partnership structures to meet the needs of each collaboration opportunity.

If you have an opportunity that you feel may be of interest to the Johnson & Johnson Family of Companies, we invite you to submit it to jnjinnovation@its.jnj.com.
Recent research has linked neuronal plasticity and cellular resilience to learning, memory, cognition and mood. We know that neuropsychiatric and neurodegenerative disorders arise from abnormalities in neuronal plasticity and cellular resilience cascades. Consequently, we are increasingly focused in this area, because understanding how to control and augment this ability for the brain and central nervous system to adapt may lead to the development of novel treatments for Alzheimer’s disease and mood disorders.

Our Neuroscience team is also pioneering holistic “predict and pre-empt” paradigms that include:

- Early diagnostics
- Patient adherence tools
- Digital therapy for cognitive remediation
- Remote monitoring for relapse prediction
- Patient management programs
PARTNERING IN NEUROSCIENCE

To execute our overarching strategy, the Janssen Research & Development Neuroscience team is focused on Alzheimer’s disease and mood disorders, and we continue our legacy work in schizophrenia. While our primary interest is in programs aimed at the discovery and development of novel medicines, we are also interested in new biomarkers and companion diagnostics to drive earlier and more accurate diagnosis, treatment response, and outcome prediction and measurement in these core focus areas.

We have a strong interest in biological molecules and in developing novel strategies to address blood-brain barrier challenges to improve CNS penetration of large-molecule medicines; for example, through receptor-mediated transcytosis and intranasal delivery methods.

We seek integrative solutions to achieve earlier intervention and adherence, and prevent relapse. Examples include nonpharmaceutical cognitive enhancing therapies and compliance technologies. Following are our core areas of interest:

Alzheimer’s Disease

DISEASE-MODIFYING ACTIVITY:
Agents in preclinical stage or later should have preclinical validated in-vivo, proof-of-concept data.
- Amyloid and tau modulators
- Synaptic recovery
- ApoE4 and neuroinflammation pathways
- Therapeutics targeting genetic factors

SYMPTOMATIC TREATMENT OF COGNITIVE IMPAIRMENT AND NEUROPSYCHIATRIC CONDITIONS:
Novel agents with Phase 2 proof-of-concept in neuropsychiatric symptoms or neuropsychiatric symptoms with cognitive impairment that exhibit superior efficacy to standard of care (e.g., antipsychotics, acetylcholinesterase inhibitors) as monotherapy or adjunctive therapy with synergistic efficacy.

BIOMARKERS AND DIAGNOSTICS:
- Prognostic, diagnostic and disease progression biomarkers
- Diagnostic imaging agents, including imaging of disease pathology (Abeta, tau), structural and functional MRI
- Improved CSF and blood biomarker assays

IDENTIFYING NEW TARGETS
Mood Disorders

DEPRESSION AND TREATMENT-RESISTANT DEPRESSION:
Novel therapeutic agents that have fast onset of action, good safety and tolerability profiles, and that address common comorbidities (e.g., anxiety, insomnia and substance abuse).
- Glutamatergic modulators
- Neuroactive cytokines
- Molecules that positively impact synaptic plasticity and cellular resilience

Phase 2 and later stage opportunities with defined mechanisms of action and superior efficacy over standard of care.

BIPOLAR DEPRESSION:
Novel therapeutic agents that provide rapid improvement in bipolar depression and in suicidal patients and that produce long-term stabilization of mood and prevent recurrences.

BIMARKERS AND INTEGRATED SOLUTIONS:
- Predictive biomarkers of response to antidepressants
- Biomarkers for relapse prediction
- Diagnostic biomarkers to identify subgroups with different etiologies

Schizophrenia
Novel therapies in Phase 2b or later for treatment of the underlying symptoms of schizophrenia with special emphasis on treatment of cognitive impairment and negative symptoms.

BIMARKERS AND INTEGRATED SOLUTIONS:
- Prognostic biomarkers to identify patients at risk for disease
- Predictive biomarkers for treatment response
- Integrated solutions for patient diagnosis or treatment assessment
- Cognitive tests for measuring disease progression

Other Areas of Interest

Janssen is also interested in pursuing external licensing opportunities in other complementary disease areas within neurodegeneration and neuroplasticity, niche indications and orphan drugs. Opportunities of interest in this area include those for neurological diseases where there is significant unmet medical need and where robust clinical proof-of-concept has been established relative to standard of care. We welcome and appreciate your interest in Janssen Research & Development Neuroscience Therapeutic Area. We look forward to learning more about the innovative work that you bring to the study and treatment of neuropsychiatric and neurodegenerative diseases.
At the current time, we are not considering these specific opportunities within Alzheimer’s disease, mood disorders and schizophrenia:

**Alzheimer’s Disease**
- Compounds with unknown mechanisms of action
- Acetylcholinesterase inhibitors
- Amyloid or tau aggregation inhibitors
- Caspase inhibitors
- GABA modulators
- Glutamatergic modulators
- Insulin modulators
- Metal chelators
- Muscarinic agonists
- Nutritionals/antioxidants
- RAISE antagonists
- Sigma agonists

**Mood Disorders**
- Compounds with unknown mechanisms of action
- Lithium formulations
- Adenosine modulators
- MAO inhibitors
- Monoaminergic modulators
- Monoaminergic reuptake inhibitors
- Non-selective ion channel modulators
- Opioid agonists (mu, delta)
- Sigma agonists

Janssen Research & Development, LLC, Neuroscience Therapeutic Area has focused research interests in Alzheimer’s disease, mood disorders and schizophrenia (see pages 9-12). Listed in this section are specific opportunities within Alzheimer’s disease, mood disorders and schizophrenia that we are not considering at this time.
Schizophrenia
- Compounds with unknown mechanisms of action
- CB modulators
- Monoamineergic modulators

Novel Pain Candidates for Out-licensing

Based on a prior track record of success in the discovery and development of therapeutic agents for pain, the Neuroscience Therapeutic Area currently has available for acquisition a number of novel candidates in the early stages of development ranging from new molecular entities to those ready for Phase 2. The potential chronic indications targeted by these agents are osteoarthritis, neuropathic and intractable pain, as well as post-operative pain.
Representatives of established pharmaceutical companies, mid-sized and large biotechnology companies, individuals with opportunities that have achieved clinical proof-of-concept, and those with interests in licensing and acquisition activities:

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Universities, small biotechnology companies, venture capital firms, and individuals with early stage opportunities prior to Phase 2 clinical proof-of-concept.

General inquiries and West Coast-based external innovation opportunities:
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We are eager to learn about a variety of opportunities from possible scientific and business partners.