

Current Projects



NOORDA COLLEGE
of OSTEOPATHIC MEDICINE



Biomedical Research

- Degenerative diseases and the brain-gut axis
- Wet lab research focusing on better understanding the pathways that underlie addiction and reward and withdrawal states, including regulation of chloride homeostasis
- In silico modeling of protein ligand interactions aimed at better understanding SUDs and developing novel therapeutics for SUDs and neuropathic pain
- Signal transduction pathways mediated by cellular metabolites.
- Cell death and survival mechanisms.
- Oxidative stress signaling in inflammatory complications.
- The role of polyol pathway enzymes in inflammatory diseases.
- Development of novel therapeutics for cancer and diabetes.
- Role of Inflammasome-mediated neuroinflammation in the neuropathogenesis of HIV-infection and Alzheimer's Disease.
- Use of nanotechnology-based drug delivery approaches targeting HIV infection in the brain and Alzheimer's disease.
- Use of gene-editing CRISPR/Cas9 technology targeting latent HIV infection in the brain.
- Evaluate the immunomodulating mechanism of psilocybin.
- Evaluate the immunomodulating effects of "on the rise" drugs of abuse.
- Test the therapeutic potential of Sulforaphane.
- Evaluate the persist cell phenotype by various stress cues.
- Evaluate the Immuno-pathophysiology of Osteopathic Manipulation Techniques.
- Immunohistochemistry analysis on Arciform Fibers and their perceived role in the FTCL
- Influence of vitamin C on epigenetic marks on DNA
- Characterization of peroxin antibodies to explore a peroxin complex on mitochondria
- Characterization of patient fibroblasts with Xeroderma pigmentosum
- Analysis of 550 Zellweger patient datasets to investigate unknown correlations



Clinical Research

- Parkinson's disease and virtual reality
- Human research focusing on understanding the potential of using KCC2, GLP-1, or other molecular targets as novel pathways to treat SUDs and neuropathic pain
- Effects of Cervical Lordosis on behavioral and cognitive function
- Cost Variation and Clinical Outcomes in Laparoscopic Appendectomy: a Non-Inferior Study
- Quantification and Treatment of Anxiety with EEG and TMS
- Genetics of Chronic Intractable Migraine with Aura
- Role of a Ketogenic Diet in Neurocognitive Decline and Reactive Hypoglycemia in Chronic Migraine
- Effect of Cervical OMM on Auditory Evoked Potential Processing
- Measure Tissue Distension with Ultrasound to Predict Cervical Somatic Dysfunction in Migraine Patients
- Ultrasonographic description of the Fibulotalocalcaneal Ligament Complex
- Ultrasound of the Lateral Collateral Ligament Complex of the Ankle: A Cadaveric Study
- Evaluate the effects of heterodyned whole-body vibration on electrocortical and peripheral biomarkers of brain dopamine
- Computer vision syndrome
- Diversity, Inclusion, and Bias
- Exercise and depression
- Headache and migraine incidence in medical students
- Analyze CCF psychosocial data from study subjects related to a specific behavioral health diagnosis (or group of behavioral health diagnoses)
- Aggregate clinical, psychosocial and GPM (genomic, PGx, medication level) data within the AI/ML system to reveal multifactorial predictive positive and negative risk factors for desirable and undesirable clinical outcomes
- Investigation of discomfort and stress in pediatric patients dependent on tube feeding
- Needs assessment to guide rare disease patient's nutrition support



Education Research

- Research aimed at providing enhanced learning experiences in medical education, graduate education, and undergraduate neuroscience education
- Anatomy Academy: Service-learning outreach
- Pre-Med Pathways Bootcamp: Premedical student outreach and pipeline
- Virtual anatomical education
- Investigation into inequity in medical teaching
- Art history in medical curriculum
- Investigation into enrollment in a structure research program
- Osteopathic student wellbeing
- Imposter phenomenon and anxiety among medical students