Active Studies

1. **Purinergic Pathways In The Human GI Tract In Health And Disease: Revealed By Neuroimaging, Serotonin Release, Secretion & Molecular Signaling Studies In Ec, Surgical Tissues, Mucosal Biopsy And Supernatants.**
   **PI:** Fedias Christofis, M.D.
   a. **Aim 1:** To identify purinergic components of mechanosensory transduction in human EC cells and IBD
   b. **Aim 2:** To investigate plurichemical and purinergic transmission in the human ENS
   c. **Aim 3:** To determine in ENS whether functional and molecular interactions occur between inflammation / immune mediators and purinergic signaling mechanisms in IBD / IBS
   d. **Aim 4:** To identify purinergic pathways in neurogenic secretomotor function and disturbances in function in IBD

2. **Baseline Cerebrospinal Fluid MicroRNA Expression In Patients Undergoing Orthopedic Surgeries.**
   **PI:** Nicoleta Stoicea, M.D., PhD
   a. **Primary Objective:** To describe the preoperative miRNA expression in CSF of patients undergoing orthopedic surgeries – total knee arthroplasty (TKA) and knee arthroscopy requiring neuraxial block.

3. **A Comparison On The Impact Of Basal Insulin Dosing Strategies On Next-Day Surgery Blood Glucose Control.**
   **PI:** Barbara Rogers, M.D.
   a. **Hypothesis:** outpatients undergoing general anesthesia for non-cardiac next-day surgery, a 25% reduction in basal dose insulin the night before will result in better perioperative blood glucose control compared with our institutional 50% decrease.

4. **Retrospective Evaluation Of The Association Of Nutritional Indices With Postoperative Outcomes In Patients Undergoing Cardiac Surgery.**
   **PI:** Ravi Tripathi, M.D.
   a. The goal of this retrospective evaluation is to identify the relationship of biochemical nutritional indices and postoperative outcomes for patients undergoing cardiac surgery at The Ohio State University Wexner Medical Center.

5. **A Prospective, Randomized, Parallel-Group Single Center Study To Evaluate The Use Of Thromboelastometry (ROTEM) In Patients Undergoing Spine Surgeries.**
   **PI:** Galina Dimitrova, M.D.
   a. **Primary Objective:** Compare the overall amount of intra-operative Red Blood Cells and Fresh Frozen Plasma guided with ROTEM versus laboratory coagulation tests in patients undergoing major spinal surgeries.
Investigator-Initiative Trials - The Ohio State University, Wexner Medical Center – Anesthesiology Department

6. Perioperative Risk Factors For Postoperative Respiratory Complications In Patients At Risk For Obstructive Sleep Apnea.
   PI: Nicoleta Stoicea, M.D., PhD
   a. To study the incidence of postoperative respiratory complications (PRCs) based on cumulative minutes per 24 hours of oxygen desaturation events ≤ 90%, in patients with and without risk factors for obstructive sleep apnea (OSA) undergoing elective noncardiac surgery (NCS).

7. The Effects Of Sitting Position On The Outcome During Surgery On Posterior Cranial Fossa And Pineal Region. PI: Sergio Bergese, M.D.
   a. **Main Objective:** comparison of the incidence of intraoperative air embolism and the extent of blood loss in patients undergoing PCF and PR surgeries in sitting and horizontal position.

   PI: Fedias Christofi, M.D.
   a. **Hypothesis:** specific circulating microRNA’s involved in the pro-inflammatory response to surgery/anesthesia are a suitable biomarker of Delirium and/or POCD in surgical hip-arthroplasty patients

9. Active Emergence From Isoflurane General Anesthesia Induced By Methylphenidate.
   PI: Nicoleta Stoicea, M.D., PhD
   a. **Hypothesis:** methylphenidate (inhibitor of dopamine and norepinephrine transporters) decreases the emergence time from isoflurane general anesthesia.

10. Impact Of Intraoperative Ventilation With High Oxygen Content To Reduce The Incidence And Extent Of Postoperative Pneumocephalus In Patients Undergoing Craniotomies.
    PI: Gurneet Sandhu, M.D.
    a. **Objective:** to compare the rate of occurrence and volume of postoperative pneumocephalus in patients receiving intraoperative ventilation with pure oxygen during the last stage of surgery (hemostasis and wound closure) versus a conventional 1:1 oxygen / air mixture.

11. Use Of High Fidelity Simulation In Cardiac-Specific Anesthesia Scenarios For Resident Education And Assessment.
    PI: Sujatha Bhandary Panambore, M.D.
    a. **Hypothesis:** that residents will perceive this simulation experience to be both mentally and physically challenging, and they will consider it a useful tool in preparing them for their subsequent clinical experience.

12. Length Of Stay And Quality Of Care In The Burn Patient.
    PI: Larry Jones, M.D.
    a. **Hypothesis:** that a LOS </= 1 day/%TBSA is a marker for burn care quality.

    PI: Michelle Humeidan, M.D.
    a. **Objective:** Test the influence of preoperative cognitive exercise compared to no intervention on the occurrence of post-operative delirium (PD) in an elderly population undergoing non-cardiac/non-neurological surgery
14. Tranexamic Acid Use And Blood Loss In Total Hip Arthroplasty.
   PI: Nicoleta Stoicea, M.D., PhD
   a. **Hypothesis:** patients undergoing primary or revision THA who receive 2gr tranexamic acid (TXA), will experience a decrease in perioperative and post-operative reduction in hemoglobin, hematocrit, and red blood cell transfusion rates compared with those of a similar group of patients who did not receive TXA (control group).

15. Interprofessional Provider Attitudes On Factors Influencing Initiation Of Epidural Analgesia In The Laboring Patient.
   PI: Jonathan Lipps, M.D.
   a. **Hypothesis:** there exists a gap in attitudes between anesthesiologists, nurses, and obstetricians with respect to the importance of various patient-specific factors on the timing of epidural placement.

   PI: John Coffman, M.D.
   a. **Hypothesis:** local anesthetic with at least 1 hour of pocket warming will result in a more rapid onset of labor analgesia and will not result in any increase in adverse effects such as fever, shivering, hypotension, nausea or vomiting.

17. Intraoperative Echocardiographic Evaluation Of Pulmonary Vein Velocities And Outcomes In Lung Transplantation.
   PI: Amar Bhatt, M.D.
   a. **Primary Objective:** To describe the relationship between intra-operative pulmonary vein systolic velocities and the incidence and grade of graft dysfunction as defined by the International Society for Heart and Lung Transplantation (ISHLT).

   PI: Sergio Bergese, M.D.
   a. **Hypothesis:** rotational thromboelastometry-guided therapy will promote a reduction of at least 20% of the volume/units of intraoperative packed red blood cell transfusion in cardiac surgery subjects under cardiopulmonary bypass when compared to standard coagulation test-guided transfusion management.

19. Opioid Consumption After Hospital Discharge In Orthopedic Surgery.
   PI: Nicoleta Stoicea, M.D., PhD
   a. **Hypothesis:** The opioid medication (oral morphine equivalent) prescribed to treat pain after total knee or hip arthroplasty exceed by a large margin (30-50%) the actual patients’ requirement and end up as a leftover medication.

20. Opioid Consumption After Hospital Discharge In Cystectomy Patients.
   PI: Tristan Weaver, M.D.
   a. **Hypothesis:** The opioid medication (oral morphine equivalent) prescribed to treat pain after total knee or hip arthroplasty exceed by a large margin (30-50%) the actual patients’ requirement and end up as a leftover medication.
21. Intraoperative Ventilation Management And Postoperative Pulmonary Complications In Patients At High Risk For Obstructive Sleep Apnea.
   PI: Samuel Lindsey, M.D.
   a. **Hypothesis**: Driving pressure value in PCV ventilation mode is a predictor of the incremental incidence of PPCs in high OSA risk patients undergoing laparoscopic bariatric surgery.

22. High Dose Epidural Fentanyl For Second Stage Labor Analgesia.
   PI: John Coffman, M.D.
   a. **Hypothesis**: Epidural administration of 10mL of 0.125% bupivacaine with 100mcg of fentanyl (high dose fentanyl) will result in superior analgesia 30 minutes after dosing and decrease the need for repeat epidural bolus doses, compared to 10mL of 0.125% bupivacaine with 20mcg of fentanyl (low dose fentanyl).

   PI: Sergio Bergese, M.D.
   a. **Hypothesis**: Transcutaneous electrical acupoint stimulation (TEAS) - through bilateral Neiguan (PC6), and Zusanli (ST36) 20 min after the first suture placement (start surgical wound closure) - will reduce the incidence of PONV in patients undergoing spinal surgeries compared to control group (patients not receiving electrostimulation).

24. A Prospective, Randomized, Double Blind Trial To Compare The Effect Of Intravenous Acetaminophen Versus Oral Acetaminophen On Postoperative Opioid Consumption In Patients Undergoing Septoplasty.
   PI: Michael Guertin, M.D.
   a. **Hypothesis**: A reduction in opioid consumption within the first postoperative 48 hours will be expected in patients receiving IV acetaminophen (Ofirmev®) when compared to oral acetaminophen (Tylenol®).

25. Anesthetic Management For Delivery Of Parturients With Arnold Chiari Malformation Type I: A Retrospective Analysis.
   PI: John Coffman, M.D.
   a. **Hypothesis**: To evaluate anesthetic practice patterns among women with Arnold Chiari Malformation at multiple institutions

26. Human Enteric Glia – A Novel Target For Motility And Postoperative Ileus [The Role Of Purinergic Signaling].
   PI: Fedias Christofi, M.D.
   a. **Hypothesis**: Human EGCs are critical regulators of mechanosensitivity, cell-to-cell communication, synaptic physiology, motility in the human intestinal tract, and inflammation disrupts their normal activity. Purinergic signaling plays a pivotal role in ‘function and dysfunction’. EGCs may exert differential (opposing) effects in the two muscle layers by acting in the enteric nervous system to modulate ascending and descending phases of the peristaltic reflex and coordinate or synchronize motility.