

DEPARTMENT OF PEDIATRICS: SUMMER RESEARCH OPPORTUNITIES FOR STUDENTS

Many of these projects are funded and offer summer stipends or pay. Your Faculty mentor will notify you if funded or not. Students working on unfunded projects are strongly encouraged to apply for the [Summer Scholars Paid Research Fellowship](#).

Note: All positions are contingent upon successful completion of training requirements for delivering the intervention.

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| Project: | Understanding the nutritional needs of premature and ill newborns cared for in the NICU |
| Faculty Mentor: | De-Ann M Pillers, MDPHD |
| General Information: | The premature and ill newborn cared for in the Neonatal Intensive Care Unit have unique nutritional needs. Using an existing dataset of metabolites in urine collected from diapers in premature infants, we will evaluate key components, correlate with nutritional supplementation, and evaluate how this may impact infant health. Other opportunities relate to exposures, such as nicotine, may also be studied. |
| Key Roles: | <ul style="list-style-type: none"> • Literature review to understand background • Review of data, analysis Present poster at College of Medicine Research Day |
| Key Qualifications/ Experience Required: | <ul style="list-style-type: none"> • Medical Student, Undergraduate students who are majoring in nutrition, metabolism, biology, chemical or biomedical engineering, or biochemistry with a premed interest. • Prerequisite: Chemistry, Biological Chemistry Understand how a spreadsheet works |
| How to Apply: | Students can apply by emailing their CV and Statement of Interest to pedsresearchcoord@uic.edu . |

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| Project: | Pediatrics Milestones Assessment Collaborative (PMAC) Phase 3 |
| Faculty Mentor: | Alan Schwartz, PhD |
| General Information: | The PMAC Phase 3 project collected assessments of over 50 senior Pediatrics residents in 5 residency programs between 2018-2019 to inform decisions about readiness to supervise other residents and students on an inpatient or outpatient service. The goal of this project is to examine the scores generated for the decision and its component competencies, and to understand factors contributing to variation in the score. |
| Key Roles: | <ul style="list-style-type: none"> • Design or refinement of research questions • Interpretation of findings Developing manuscript(s) based on findings |
| Key Qualifications/ Experience Required: | <ul style="list-style-type: none"> • Interest in medical education and assessment in Pediatrics • Basic understanding of statistical methods and interest in learning more is helpful Undergraduate major in social science or education not required, but a plus |
| How to Apply: | Students can apply by emailing their CV & Statement of Interest to pedsresearchcoord@uic.edu . |

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| Project: | PATH 2 Purpose: Primary Care and Community-Based Prevention of Mental Health Disorders in Adolescents |
| Faculty Mentor: | Rebecca Feinstein |
| General Information: | <p>The PATH 2 Purpose study is a two-arm comparative effectiveness research trial that will evaluate the ability of the interventions, Teens Achieving Mastery over Stress (TEAMS) and Competent Adulthood Transition with Cognitive-behavioral and Interpersonal Training (CATCH-IT), to intervene early to prevent depressive illness in adolescents ages 13-18 from diverse communities. The study will enroll 564 teens at-risk for depression into the two different prevention programs, TEAMS and CATCH-IT, and compare their effectiveness, accessibility, time commitment, cultural acceptability, and implementation costs. Our challenge is to:</p> <ul style="list-style-type: none"> • Widely implement effective, evidenced-based mental health interventions in primary care clinics and schools; • Successfully adapt the interventions for use in diverse communities; and • Create a sustainable system for the interventions to be used in a population-health model. <p>See http://path2purpose.uic.edu</p> |
| Research Activities | Screening, Recruitment, and enrollment of adolescent patients age 13-18 in UIC pediatric and adolescent medicine clinics and Mile Square Health Centers. |
| Key Qualifications/ Experience Required: | We are seeking undergraduate and graduate students interest who have interpersonal skills, can work independently, and have previous work/volunteer experience with adolescents ages 13-18. |
| How to Apply: | Student can apply by emailing pedsresearchcoord@uic.edu with their CV and a Statement of Interest. |

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| Project: | Asthma Action at Erie – Project Dissemination |
| Faculty Mentor: | Dr. Molly Martin, MD MAPP <i>Associate Head for Research</i> |
| General Information: | <p>Asthma Action at Erie is a NIH-funded comparative effectiveness trial that compares clinic certified asthma educator services to home community health worker asthma support. The trial is a partnership between Erie Family Health Center and UIC. All of the 223 participating families include a child with asthma that is a patient at Erie Family Health Center. Families are mainly low-income and Mexican-American ethnicity, with about a third preferring Spanish. All intervention and data collection are completed. Analyses are underway to determine if the interventions improved asthma outcomes.</p> |
| Key Roles: | <ul style="list-style-type: none"> • Prepare results of data analysis into dissemination documents for Erie Family Health Center and the participants. <p>Create low-literacy flyers and a video.</p> |
| Key Qualifications/ Experience Required: | <ul style="list-style-type: none"> • Spanish language literacy is preferred, as all final products need to be in English and Spanish. <p>Familiarity with basic graphic design (publisher) and power point or more advanced video production software is helpful.</p> |
| How to Apply: | Students interested in applying should contact Molly Martin at mollyma@uic.edu . |

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| Project: | Asthma Action at Erie – Follow Up Data Collections |
| Faculty Mentor: | Dr. Molly Martin, MD MAPP <i>Associate Head for Research</i> |
| General Information: | Asthma Action at Erie is a NIH-funded comparative effectiveness trial that compares clinic certified asthma educator services to home community health worker asthma support. The trial is a partnership between Erie Family Health Center and UIC. All of the 223 participating families include a child with asthma that is a patient at Erie Family Health Center. All intervention and data collection are completed. Analyses are underway to determine if the interventions improved asthma outcomes. Erie Family Health Center is also interested in the experience of their patients in this research study. They conducted a short survey of participants via the telephone. |
| Key Roles: | <ul style="list-style-type: none"> Use qualitative and quantitative data analysis methods to compile a summary of these results. Prepare results in a report for Erie Family Health Center. |
| Key Qualifications/ Experience Required: | Spanish language literacy is preferred, as many of the responses are in Spanish. |
| How to Apply: | Students interested in applying should contact Molly Martin at mollyma@uic.edu . |

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| Project: | Coordinated Oral Health Promotion (CO-OP) Chicago |
| Faculty Mentor: | Dr. Molly Martin, MD MAPP <i>Associate Head for Research</i> |
| General Information: | Coordinated Oral Health Promotion (CO-OP) Chicago is a NIH-funded cluster-randomized controlled trial that compares oral health community health worker services to usual care. Participants include 420 low-income families of children under the age of three years old in Cook County. All intervention and data collection will be completed in March of 2020. Analyses will then be conducted to determine if the intervention improved child oral health behaviors |
| Key Roles: | <ul style="list-style-type: none"> Prepare results of data analysis into dissemination documents for Erie Family Health Center and the participants. <p>Create low-literacy flyers and a video.</p> |
| Key Qualifications/ Experience Required: | <ul style="list-style-type: none"> Spanish language literacy is preferred, as all final products need to be in English and Spanish. <p>Familiarity with basic graphic design (publisher) and power point or more advanced video production software is helpful.</p> |
| How to Apply: | Students interested in applying should contact Molly Martin at mollyma@uic.edu . |

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| Project: | Effectiveness of Mixed-Reality Based Training Tool for Parents to Learn Infant Cardio-Pulmonary Resuscitation (CPR) |
| Faculty Mentor: | Nishant Srinivasan MD |
| General Information: | Cardiopulmonary arrest is an emergency often leading to death in the absence of immediate intervention. Current CPR training models for non-medical first responders do not effectively provide relevance and relatability, and does not consider the impact of anxiety related to the event on training. To address these shortcomings in CPR training for parents, we propose the following objectives: 1) to develop an immersive and interactive mixed reality based training tool for parents to learn infant CPR; 2) to validate the efficacy of our mixed reality infant CPR simulator, in comparison with existing training modalities in their ability to provide knowledge, skill and confidence in performing CPR; and 3) to quantify the effect of anxiety and stress on CPR performance in parents witnessing cardiac arrest in a virtual environment. |
| Key Roles: | The student will be responsible for developing 1) the mannequin component, including touch sensors and electromechanical pumps needed to emulate patient breathing and measure the level and location of chest compressions during training and simulation; and 2) a software component, involving a mixed reality application to provide for 3D immersive visualization of a realistic virtual infant that will respond to trainee's actions. |
| Key Qualifications/ Experience Required: | <ul style="list-style-type: none"> Students with background in biomedical engineering with experience in using virtual reality and 3-D modelling would be preferred candidates to work on this project |
| How to Apply: | Contact the PI (Dr. Srinivasan) at srinis@uic.edu if interested in the position. Candidates are encouraged to send a copy of their CV and a personal statement stating interests and previous work in the area. |

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| Project: | Redox and proto-oncogene signaling in lung repair after Injury |
| Faculty Mentor: | Sekhar P. Reddy, Professor |
| General Information: | Research focuses on elucidating crucial role and regulation of macrophage-specific and epithelial – specific redox and proto-oncogene signaling in lung tissue repair both in neonates and in adults using preclinical models of acute lung injury and sepsis. |
| Key Roles: | <ul style="list-style-type: none"> To perform research using cell culture and genetic models. To assist postdocs in research experiments when needed. |
| Key Qualifications/ Experience Required: | <ul style="list-style-type: none"> Undergraduates and high school Seniors Experience with basic lab techniques (gene expression and DNA analysis) is preferable |
| How to Apply: | Students can apply by emailing their CV and Statement of Interest to pedsresearchcoord@uic.edu . |