

Summer Student Research Program

Project Description

FACULTY SPONSOR'S NAME AND DEGREE: *Alice Chu, MD*

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PROJECT TITLE (200 Characters max):

Pediatric Orthopaedics Research

HYPOTHESIS:

1. *Qualitative analysis of bracing treatment for scoliosis*
2. *Machine learning analysis of large data sets*
3. *Motion Analysis reveals differences between neurotypical and cerebral palsy subjects*

PROJECT DESCRIPTION (Include design, methodology, data collection, techniques, data analysis to be employed and evaluation and interpretation methodology)

1. *Collect and interview subjects; analyze data using mixed methods approaches*
2. *Program and use machine learning methods to analyze NRD, NEISS or NSQIP data*
3. *Collect subject data in a motion analysis laboratory; analyze using machine learning and statistical methods*

SPONSOR'S MOST RECENT PUBLICATIONS RELEVANT TO THIS RESEARCH:

For the above projects – only abstracts have been published; one article in submission.

Do educational interventions reduce the gender gap in communication skills?- a systematic review

A.M., Driscoll, Alexis M., R., Suresh, Rohan, G., Popa, George, ... A., Chu, Alice, A.M.,
McGrath, Aleksandra M.
BMC Medical Education, 2024

Survey of the POSNA Membership Reveals Variability in Use of Tibialis Anterior Tendon Transfer for Recurrent Clubfoot

H.E., Grissom, Helyn E., D.A., Sala, Debra A., J.M., Litrenta, Jody M., W.B., Lehman, Wallace B., A., Chu, Alice
Bulletin of the Hospital for Joint Diseases, 2024

“Top 20” residency-trained academic orthopaedic surgeons have higher academic productivity and funding in their careers

D., Mendiratta, Dhruv, I.H., Herzog, Isabel H., D.F., Liggio, Daniel Frank, ... N.K., Kaushal, Neil K., A., Chu, Alice
Journal of Orthopaedic Research, 2024

THIS PROJECT IS: ☒ **Clinical** ☐ **Laboratory** ☐ **Behavioral** ☐ **Other**

THIS PROJECT IS CANCER-RELATED ☐

Please explain Cancer relevance

THIS PROJECT IS HEART, LUNG & BLOOD- RELATED ☐

Please explain Heart, Lung, Blood relevance

THIS PROJECT INVOLVE RADIOISOTOPES? ☐

THIS PROJECT INVOLVES THE USE OF ANIMALS ☐

PENDING ☐

APPROVED ☐

IACUC PROTOCOL #

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THIS PROJECT INVOLVES THE USE OF HUMAN SUBJECTS? ☐XPro2023001374

THIS PROJECT IS SUITABLE FOR:

UNDERGRADUATE STUDENTS ☐X

SOPHOMORES ☐

ENTERING FRESHMAN ☐

ALL STUDENTS ☐X

THIS PROJECT IS WORK-STUDY: Yes ☐ or No ☐X

THIS PROJECT WILL BE POSTED DURING ACADEMIC YEAR

FOR INTERESTED VOLUNTEERS: Yes ☐X or No ☐

WHAT WILL THE STUDENT LEARN FROM THIS EXPERIENCE?

Clinical data collection, IRB, data analysis, writing and abstract/paper submission