

Summer Student Research Program
Project Description

FACULTY SPONSOR'S NAME AND DEGREE: *John T. Capo, MD*

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PROJECT TITLE (200 Characters max): **The Treatment of Combined Fractures of the Distal Radius and Radial Shaft with a Hybrid Plate**

HYPOTHESIS: Treatment of these combined injuries with a plate designed specifically for this fracture pattern is an effective method.

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

Introduction: There are multiple options for fixation of diaphyseal radial shaft fractures. The standard of care is rigid plating with 3.5mm dynamic compression plates. This has proven to be effective for the central diaphysis of the radial shaft. However, when fractures involve the diaphyses and the proximal or distal metaphyseal regions, novel techniques of fixation need to be employed. In addition, in those fractures with severe comminution, restoration of the radial bow and length are imperative even if compression plating is not possible. A hybrid plate is a relatively new design that has been proven to be effective.

Study Methods: The staff surgeons of the Department of Orthopaedics have performed several of these novel surgeries in trauma patients. The data collection process has begun and early results are promising. This project would involve continuation of the data collection, analysis, writing and submission of the scientific manuscript. The students participation would involve evaluation of radiographs, measurement of upper extremity range of motion and strength, and basic statistical data analysis.

SPONSOR'S MOST RECENT PUBLICATIONS RELEVANT TO THIS RESEARCH:

Capo JT Liporace F, Ng, D, Caruso S. *Bilateral Comminuted Radial Shaft Fractures From a Single Gunshot: Fixation With Alternative Techniques*. American Journal of Orthopaedics. 2009, 38(4): 194-198

IS THIS PROJECT SUPPORTED BY EXTRAMURAL FUNDS?

Yes or No

(IF YES, PLEASE SUPPLY THE GRANTING AGENCY'S NAME)

THIS PROJECT IS: Clinical Laboratory Behavioral Other

THIS PROJECT IS CANCER-RELATED

Please explain Cancer relevance

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THIS PROJECT IS HEART, LUNG & BLOOD- RELATED

Please explain Heart, Lung, Blood relevance

THIS PROJECT EMPLOYS RADIOISOTOPES

THIS PROJECT INVOLVES THE USE OF ANIMALS

PENDING

APPROVED

IACUC PROTOCOL #

THIS PROJECT INVOLVES THE USE OF HUMAN SUBJECTS

PENDING

APPROVED

IRB PROTOCOL # M0120090107

THIS PROJECT IS SUITABLE FOR:

UNDERGRADUATE STUDENTS

ENTERING FRESHMAN

SOPHOMORES

ALL STUDENTS

THIS PROJECT IS WORK-STUDY: Yes or No

THIS PROJECT WILL BE POSTED DURING ACADEMIC YEAR

FOR INTERESTED VOLUNTEERS?: Yes or No

WHAT WILL THE STUDENT LEARN FROM THIS EXPERIENCE?

How the development of a new technique in Orthopaedic Surgery can be effectively implemented to assist patients with difficult traumatic injuries. The student will gain experience in the interpretation of musculoskeletal radiographs, examining Orthopaedic patients and interpreting clinical data.