

Summer Research Fellowship Proposal for 2020

FACULTY INFORMATION:

NAME: Antiño R. Allen, PhD

DEPARTMENT: UAMS - College of Pharmacy

LOCATION: Biomed II, Room 441B-2

PROJECT INFORMATION:

TITLE: Mechanisms of Chemotherapy-Induced Cognitive Impairment

LOCATION OF THE PROJECT: Biomed II, Room 451-2

BRIEF DESCRIPTION OF THE PROJECT: The National Cancer Institute estimated that \approx 266,120 new cases of breast cancer will be diagnosed in the U.S. in 2018, and over 15% of U.S. women will be diagnosed with breast cancer during their lifetime. Chemotherapy is commonly used in the management of cancer, but its effectiveness is limited by the potential for injury to normal tissues. Chemotherapy induced cognitive impairment, also Referred to as “chemobrain” or “chemofog,” is experienced by 15 – 80% of cancer patients and survivors. The Allen laboratory is interested in understanding the mechanisms that are responsible for behavioral toxicities after cancer therapy. Combination chemotherapy, rather than monotherapy, is typical. While the study of single-agent effects can prove insightful, it has been suggested that adverse effects of single agents may be synergistic when the agents are given in combination, which contributes to an increased risk of chemotherapy-induced neurotoxicity. Combination therapies for breast cancer include doxorubicin, cyclophosphamide and paclitaxel (AC-T); cyclophosphamide, doxorubicin, and 5-fluorouracil (CAF); cyclophosphamide, epirubicin, and 5-fluorouracil (CEF); and cyclophosphamide, methotrexate, and 5-fluorouracil (CMF): the current project will focus on AC-T. Trainees in my lab learn and use a variety of techniques including: behavioral studies, molecular biology (PCR), biochemistry (protein expression, Western blots), immunohistochemistry, histology, light/fluorescent microscopy, cell culture in order to answer questions at multiple levels of the investigation.

STUDENT’S RESPONSIBILITIES-DUTIES IN THE PROPOSED PROJECT: Behavioral Studies and PCR

ESTIMATED TIME FOR PROJECT COMPLETION: ___6___ weeks

DOES THE WORK INVOLVE ANIMAL RESEARCH? YES --X-----
NO -----

