

2016 Undergraduate Research Grant Awardees
VAS Fall Undergraduate Meeting
October 29, 2016
Virginia Union University, Richmond

Poster #5

Comparison and Application of Fluorescent and Non-fluorescent Methods of Low Concentration Amino Acid Separation using HPLC

Matthew Anderson

Mentor: Michael Korn, Dept. of Biology & Chemistry, Liberty University

This project involves the comparison and evaluation of different analytical methods for the most effective identification of low concentration mixtures of amino acids by HPLC, testing (a) ortho-phthaldialdehyde (OPA) derivatization; (b) dansyl choride derivatization; and (c) non-modified amino acids via a polar end-capped HPLC column.

Poster #10

Morphometric Study of Visceral Adipose Tissue Composition and its Correlations with Molecular Signaling Events and Progression of Non-alcoholic Fatty Liver Disease (NAFLD)

Joseph Bradley

Mentor: Ancha Baranova, School of Systems Biology, George Mason University

Visceral adipose tissue (VAT) serves as an endocrine organ that contributes to Metabolic Syndrome (MS) and Non-alcoholic Fatty Liver Disease (NAFLD). In adults, some brown adipose tissue (BAT) is present within VAT and interferes with its endocrine function. We plan to assess BAT component in VAT composition and correlate it with NAFLD stages.

Poster #16

Molecular Examination of DNA in Rodlet Cells of Teleost Fish

Brandon Hamel

Mentor: David Gauthier, Dept. of Biological Sciences, Old Dominion University

Rodlet cells are an unusual cell type found in bony fishes (teleosts). Their unique structure and ambiguous function raise questions among biologists as to their evolutionary origin. This project will utilize molecular genetic techniques in an attempt to more clearly define the identity and origin of these enigmatic cells.

Poster #18

Language Translates to Executive Functions: Investigating the Bilingual Advantage in Inhibitory Control

Melina Knabe

Mentor: Sarah Blythe, Neuroscience Program, Washington and Lee University

This study investigates the effect of mono- and bilingualism on non-linguistic domains using three executive function tasks. Results will demonstrate which linguistic experiences contribute advantageously to cognitive control and task performance.

Poster #24

Microbial Effects of Chemically Modified Essential Oils

Stefany Orellana, Meghan Ehko and Katherine Phillips

Mentor: Michael Korn and Todd Allen, Dept. of Biology & Chemistry, Liberty University

This proposal is an interdisciplinary project between organic chemistry, microbiology and analytical chemistry to investigate chemically modified essential oils and their ability to inhibit the growth of gram-positive and gram-negative bacteria.

Poster #30

ncRNA Gene Expression Associated with Alzheimer's Disease (AD) and Nutrition

Christopher Schreiner

Mentor: Gary Isaacs, Dept. of Biology & Chemistry, Liberty University

qPCR will be used to confirm the expression of genes discovered via RNA-Seq analysis in AD mice. These methods will later be applied for gene expression analysis in a dietary folate model.

Poster #33

Nanoscale Determination of Common Metal Contaminants in Drinking Water via Quantum Dot-based Fluorescence

Corshai Williams

Mentor: Karl Jackson, Dept. of Natural Sciences, Virginia Union University

A quick and simple method of nanoscale metal ion determination via quantum dot-based fluorescence will be developed for common contaminants in drinking water. The quenching of fluorescence in semiconducting nanoparticles by analyte species will be measured and used to determine optimal conditions.