

# 2021 CNAS Virtual Undergraduate Research Symposium Winners

## **Biology: Ecology, Wildlife and Conservation**

**1st Place:** *Abigail Giering*

DO OZARK NATIVE DUCKWEED SPECIES STAND A CHANCE AGAINST NON-NATIVE LANDOLTIA PUNCTATA IN AMMONIA POLLUTED WATERS?

Faculty Advisor: Dr. La Toya Kissoon-Charles

**2nd Place:** *Madoch Jamroch, Allison Scott*

ANATOXIN-A DETECTION IN SPRINGFIELD WATER SYSTEMS

Faculty Advisor: Dr. Babur Mirza

## **Biology: Cellular, Microbiology and Genetics**

**1st Place:** *Nhi Le, Cameron Kirk*

KINETIC ANALYSIS OF CADMIUM QUANTUM DOT'S TRAFFIC

Faculty Advisor: Dr. Kyoungtae Kim

**2nd Place:** *Dailyn Jones*

IDENTIFICATION OF THE TERATOGENIC AND TOXIC EFFECTS OF THE HERBICIDES HEXAZINONE, MECOPROP, AND THIFENSULFURON-METHYL ON ZEBRAFISH EMBRYONIC DEVELOPMENT AND SURVIVAL

Faculty Advisor: Dr. Ryan Udan

## **Chemistry**

**1st Place:** *Autumn Pilarski*

<sup>1</sup>H SOLUTION NMR ANALYSIS OF AN 8MER NON-PALINDROMIC DNA SEQUENCE CONTAINING A U:G MISMATCH

Faculty Advisor: Dr. Gary Meints

**2nd Place:** *Giselle Campos, Samuel Nack*

COMPUTATIONAL STUDY ON STRUCTURE OF IR SPECTRAL LIBRARY USING CLUSTER ANALYSIS

Faculty Advisors: Dr. Razib Iqbal and Dr. Keiichi Yoshimatsu

## **Cooperative Engineering**

**1st Place:** *Dominic Zucchini, Tyler Tracy, Cassidy Johnson, Whitney Vermillion*

CONTACTLESS LEVEL ACQUISITION AND MONITORING SYSTEM (CLAMS)

Faculty advisors: Dr. Doug Carroll and Dr. Matt Pierson

**2nd Place:** *Curtis Brumfield, Kyle Doran, Logan Reed, Benjamin Hynes*  
UNDERSTANDING THE BASICS OF POWER FACTOR CORRECTION  
Faculty Advisors: Dr. Tayo Obafemi-Ajayi

## **Geology**

**1st Place** *Dorian DeHart*  
TEMPERATURE AND DISCHARGE MONITORING OF SPRINGS AND STREAMS TO  
APPROXIMATE WATER DRAINAGE BASINS IN THE SPRINGFIELD PLATEAU,  
MISSOURI  
Faculty advisor: Dr. Doug Gouzie

**2nd Place:** *Brianna Williams*  
PLAGIOCLASE ZONING AS AN INDICATOR OF MAGMA PROCESSES AT SAN  
PEDRO VOLCANO, CENTRAL VOLCANIC ZONE, CHILE  
Faculty Advisors: Dr. Gary Michelfelder

## **Geography, Geospatial and Planning**

**1st Place:** *Ramona Gomez*  
WATER QUALITY ANALYSIS OF THE SPRINGFIELD PLATEAU AQUIFER  
Faculty advisor: Dr. Melida Gutierrez

**2nd Place:** *Kara Smith*  
YOUR PERSONAL TOUR THROUGH DUBLIN, IRELAND  
Faculty Advisors: Dr. Krista Evans

## **Hospitality Leadership**

1st Place: *Courtney Roberts, Elijah Sellers, Mara Presot, Bethany Osheim*  
TOURISTS' PERCEPTIONS OF DESTINATION AND ITS PRODUCTS: THE CASE OF  
ITALY  
Faculty Advisor: Dr. Yoshimasa "Nancy" Kageyama.

## **Mathematics**

**1st Place:** *Fiona Wu, Slade Gunther*  
MIXED ERDOS TYPE POINT CONFIGURATION ESTIMATES  
Faculty Advisor: Dr. Steven Senger

**2nd Place:** *Rachel Heili*

USING MATHEMATICAL ARGUMENTS AS A TOOL TO DEVELOP CONCEPTUAL UNDERSTANDING IN A DEVELOPMENTAL MATHEMATICS CLASS

Faculty Advisor: Dr. Patrick Sullivan

### **Physics, Astronomy and Materials Science**

**1st Place:** *Daniel Amuedo*

FREE-STANDING LIQUID MEMBRANES AS A NON-FOULING FILTER FOR THE REMOVAL OF MICRO-PLASTICS FROM WATER

Faculty Advisor: Dr. Tiglet Besara

**2nd Place:** *Tyler McGilvry-James*

ARTIFICIAL INTELLIGENCE FOR DEFECT EXAMINATION (AIDE)

Faculty Advisor: Dr. Ridwan Sakidja