# CHEMISTRY NEWS

Cleveland State University, Chemistry Department

VOL. 1, ISSUE 2 6.1.2022

## Top stories in this newsletter

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NIH Award $544,000 over five years
Dr. Anthony Berdis

## Dr. Joseph Mundell Retirement

**Dr. Joseph Mundell** Senior Manager of the Freshman Program and Director of the Chemistry Freshman Committee has announced his retirement. Dr. Mundell has been an extraordinary asset to the Chemistry Department for 22 years.

**Thank you**, Dr. Mundell for your dedication to the students, faculty, and staff! You have changed the lives of so many and we are truly grateful for your devotion!

## Graduate Student Research Awards

**Mia Forren** "Developing New Therapeutic Agents Against Acute Myeloid Leukemia."

**Erin Thorpe** "Analysis of Promising Anti-Cancer Compounds Derived from Natural Sources."

**Igor Radzikh** "DODA Treatment: Study of Metabolic Outcomes of a New Therapeutic Approach in Cellular Model of VLCAD Disease."

**Ahmed Salem** "Synthesis of Novel Transition Metal N,N´ Azodioxide Complexes for Biomedical Applications."

**Joseph Keil** "Glyco-Engineering of Recombinant Thrombomodulin."

**Uthman Alghamdi** "Inhibition of Hypoxia-Inducible Factor-1α (HIF-1α) Provides a Therapeutic Approach for Hepatocellular Carcinoma (HCC)."

## Receives NIH Award

Dr. Berdis, a professor in the Department of Chemistry, has received NIH funding awarded under a grant from the National Institute of Allergy and Infectious Diseases (NIAID) of the National Institutes of Health (NIH). The title of the proposal is "Novel Combination Therapies to Combat Hypermutable Carbapenem-resistant P. aeruginosa." His project has been funded for $544,000 over a five (5) year period.

The proposed research will use the artificial nucleosides developed in the Berdis lab to combat drug-resistance to b-lactam antibiotics by two (2) distinct mechanisms. The first is by the ability of the artificial nucleosides to inhibit the replication of damaged DNA generated by reactive oxygen species (ROS) after antibiotic treatment. The second is by eliminating bacterial "persisters" that arise in response to treatment with anti-microbial agents. Collectively, this research will lead to new therapies against drug-resistant bacteria such as P. aeruginosa, a deadly opportunistic pathogen that causes pneumonia.

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