

# CHEMISTRY NEWS

Cleveland State University, Chemistry Department

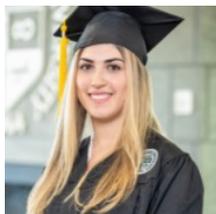
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## CCF Collaboration



**Dr. Y. I. Sandlers** an Assistant Professor with Department of Chemistry and Dr. Jessica Colon-Franco, the Head of the Clinical Biochemistry at Cleveland Clinic bring together their expertise as guest editors for a special issue "Metabolomic Applications in Medical Strategy for Inborn Errors of Metabolism" with "Metabolites" journal. Drs' Sandlers and Colon-Franco will co-edit submission of original research and review manuscripts that explore current challenges in integrating metabolomics into laboratory medicine. The goal of the special issue is to expand knowledge in current and emerging techniques and to facilitate new insights and management of inherited metabolic disorders

## Valedictorian



**Raina Dano's** passion for research started in the summer of 2019, after her second year of university. She landed a research student internship at Cleveland Clinic's Lerner Research Institute. Dano worked in the Inflammation and Immunity department under P.I. Dr. Srinivasan Dasarathy, who introduced her to biochemical lab techniques and all the basic procedures she would need for real-world lab settings. In her third year, Dano began work under Dr. Bin Su, who she remained with for the remainder of her undergrad. Dr. Su's lab focuses on the disease African Trypanosomiasis, and the cancers glioblastoma (brain cancer) and ductal carcinoma (breast cancer). Subsequent biological and pharmacokinetic assays with Dr. Su have led to research published with Dano as coauthor

## NIH Award



**Dr. Xue-Long Sun**, a professor in the Department of Chemistry and a member of the Center for Gene Regulation in Health and Disease (GRHD), has been awarded a grant under the Academic Research Enhancement Award (AREA) program from the National Institute of General Medical Sciences (NIGMS) of the National Institutes of Health (NIH). His project, titled "Development of Location-specific Sialidase Inhibitors" has been funded for \$445,500 over three years. The proposed research aims to investigate the sialidase-catalyzed desialylation mechanism related to Toll-like receptors (TLRs) activation and develop novel sialidase inhibitors to manipulate dysregulated TLRs activation and thus to discover novel therapeutic approach for chronic and acute inflammatory disorders that often cause most dangerous disease like sepsis. The novel sialidase inhibitors can also be explored for inhibition of SARS-CoV-2 replication, as a novel therapeutic approach for COVID-19.

## NIH Award



**Dr. Mekki Bayachou**, a professor in the Department of Chemistry, has received a 3-year R15 award from the National Institutes of Health (NIH) to develop new ultra miniature sensors for measurements within cells. Dr. Bayachou's \$447,128 award is funded by the National Institute of General Medical Sciences (NIGMS) and is titled, "Selenide-based electrocatalytic sensors for sensitive peroxynitrite detection in biological media: a bottom-up approach for functional interface design." Dr. Bayachou and his group are developing a nanostructured thin film material based on defined organic selenides chemically attached to ultra microelectrodes as sensing devices. This innovative bottom-up interface engineering design approach allows for the possibility to fine-tune the interface properties to optimize sensitivity and selectivity of the detection of this disease marker.