

MWRM

Javier Vela, *Program Chair*

MONDAY MORNING

Scheman Building
299

Undergraduate Poster Session

M. Bohorquez, T. Holme, *Organizers*

8:00 - 10:00

135. Alternative electrolytes for lithium-ion batteries: Organosilyl nitrile replacements for carbonate solvents. **S. Sharpe**, L.J. Lyons

136. Detailed kinetic modeling of the mammalian pyruvate dehydrogenase regulatory complex. B. Jelinek, **M. Moxley**

137. Using molecular docking to find potential anti-cancer drugs that bind a mutant form of spekle-type POZ, SPOP, a protein necessary for the maintenance of a number of cancer cells. **M. Lee**, I.S. Zegar

138. Fighting cancer by targeting cancer stem cells (CSCs) using virtual docking techniques. **D. McAfee**, I.S. Zegar

139. Comparing ROS in murine microglial cells in response to two different types of particulate matter. **P.A. Mazzer**, L.L. Merrill, K. Buchmann, N. Stadem, M. Street, T. Fortuna

140. Effect of melanin on the degradation of ectomycorrhizal fungi. **J. Swenson**, K. Schreiner, M. Ryan, P. Kennedy

141. Herbicide fate and transport in an agricultural watershed. **K. Mehlretter**, A. Graham, E.M. Marzluff

142. Influence of CdSe nanocrystal shape on vibrational spectra. **B. Nottleson**, **B. Nelson**, M. Wilker

143. Structure and synthesis of ternary rare earth tetrel pnictides. **B. McBride**, J. Mark, K. Kovnir

144. Toward the synthesis of ketose-based calix[4]pyrroles. **K. Wang**, J.A. Shriver

145. Electrochemical DNA sensor for the detection of antibiotic resistance in *N. gonorrhoeae*. **A.M. Schuster**

146. Quantum dot-aptamer bioconjugates for prostate cancer detection. B. Eichler, **E. Menzel**, **M.J. Rothschadl**, **T.T. Nguyen**

- 147.** Bioaccumulation of methylmercury: Investigation of contamination in *Pylodictis olivaris* and *Ictalurus punctatus*. **A. Austin**, A. Brustkern
- 148.** Hygroscopicity of sodium glycinate aerosols. **M. Grove**, J.P. Darr
- 149.** Synthesis of tris((5-(4,5-dihydrooxazol-2-yl)-1H-pyrrol-2-yl)methyl)amine and preparation for iron complex. **M. Wardlaw**, M.K. Kamunde-Devonish
- 150.** NMR diffusion studies of ions and solvent in organosilyl nitrile electrolytes with LiPF₆ for application in lithium-ion batteries. **T. Derrah**, L.J. Lyons
- 151.** Synthesis of 1-(*tert*-butyl)-3(pyridin-2-yl)urea and the redox non-innocent ligand bis(2-aminophenyl)amine. **C.B. McKenzie-Smith**, M.K. Kamunde-Devonish
- 152.** Binding of curcuminoids to human serum albumin (HSA) using fluorescence spectroscopy. **E. Fuller**, **H. Nyiera**, **S. Rolland**, O. Michels
- 153.** Ionic conductivities of fluorinated organosilicon and carbonate blend electrolytes for lithium-ion batteries. **S. Yoon**, L.J. Lyons
- 154.** Bioinspired synthesis of molybdenum carbide for hydrogen evolution reaction. **T. Morey**, **K. Morey**, K.S. Siam, P.K. Kahol, R. Gupta
- 155.** Understanding the seasonal variation of Cl⁻/Na⁺ concentration ratio in polar snow. **L. Samaranayake**
- 156.** Applications of the adaptive resolution simulation (AdResS) with Gaussian processing treatment to biomolecules. **B. Sanchez**, Z. Douglas, Y. Tang, S. Crivelli, W. Dejong, M. Watanabe
- 157.** Synthesis of potential antimicrobial novel propargylic-isoxazolines. **A.L. Schull**, J.L. Duffy-Matzner
- 158.** Modified silicone hydrogel contact lenses for ocular drug delivery. **E. Wanous**, J.L. Duffy-Matzner
- 159.** Effect of nucleophile and leaving group on an addition reaction to dichloronaphthaquinone. **S. Aguilar**, A.N. Garr
- 160.** Effect of L-threonine on the hygroscopicity of sodium chloride aerosols. **E. Mendoza-Lopez**, J.P. Darr
- 161.** Efforts towards improving the synthesis of oxoquinonacyclophanes. **K. Berst**, J.W. Wackerly
- 162.** Change in hygroscopic properties of sodium chloride aerosols induced by L-arginine. **W. Mitts**, E. Mendoza-Lopez, J.P. Darr
- 163.** Water quality monitoring at the Cheyenne Bottoms Wildlife Area. **D. Munganga**, **A.K. Szeto**, C.J. Wolf, R.L. Penner
- 164.** Synthesis, characterization and antimicrobial evaluation of fluorophore-substituted 1,2,3-triazolium salts. **C.A. Lejcher**, J.T. Fletcher
- 165.** Bidentate chelators with 1,2,3-triazole and isoquinoline subunits. **N.W. Kreofsky**, J.T. Fletcher
- 166.** Optimizing lipid extraction in *Anabaena*. H. Menning, **P.A. Mazzer**

- 167.** Molecular dynamics simulation studies of adsorption of biological molecules onto nanomaterial. **J. Lozenski**, T. Rickel, Z. Green, M. Watanabe
- 168.** Quantum yield comparison of doped carbon dots and fluorescence dependence on pH. **M. Prado**
- 169.** Mössbauer studies of mitochondrial and prokaryotic iron-sulfur proteins. **K.A. Valdes**, **C.V. Popescu**, H. Ding
- 170.** Preparations of transition metal complexes containing redox non-innocent ligands as pre-catalysts for chemical transformations. **M. Kolanowski**, M.K. Kamunde-Devonish
- 171.** Educational, proactive approach to undergraduate general and organic chemistry lab. **C. Nguyen**, P.K. Morehouse
- 172.** Amino acid as a chiral modifier in metal-organic framework for asymmetric hydrogenation reaction. **C. Ward**, W. Huang, J. Goh
- 173.** Uranyl-selenate coordination polymers: Interactions with interstitial N-donors. **J.M. Williams**, T. Forbes, M.M. Pyrch, D. Unruh
- 174.** Synthesis and spectroscopic properties of uranyl molecular compounds containing acetamideoxime. **A. Blanes**, M.M. Pyrch, L. Applegate, T. Forbes
- 175.** Determination of the kinetic expression of the photochemical degradation of dicamba in aqueous solutions and on epicuticular waxes. **B. Courteau**, A.M. Nienow
- 176.** Role of carbon monoxide in atmospheric Haze formation at cryogenic temperatures. **N. Bishop**, J.K. Rishi, J. Sebree
- 177.** Synthesis and characterization of ValDrug and ValDrug-Naphthalimide compounds for localized drug delivery. **K. Parrott**, T. Divis, H. Lovstad, W. Rouse, J.E. Elbert
- 178.** Effect of number density on aromatic seeded aerosols as measured through thin film spectroscopy. **J. Rishi**
- 179.** Electrochemical properties of glutathione conjugates formed from bisphenol A-3,4-quinone. **B. Mullen**, D.E. Stack
- 180.** Using amino acids in the fight against antibiotic resistance. **J. Scheffler**, **C. Lemmons**, D.J. Peitz
- 181.** Color, bitterness, Iron, VDKs, and specific gravity: A study of the chemistry of beer. **P. Riegsecker**, **S. Armstrong**, D.J. Peitz
- 182.** Synthesis, characterization, and electrochemical properties of Schiff base polymers. **B. Goeden**, **L. Smith**, J. Kramer, S. Mao, M. Balasingam, M.D. Koppang, H. Sun
- 183.** NMR relaxation as a method of exploring porous networks in gelatin methacryloyl. **B.E. Kinn**, A. Allgeier

MONDAY AFTERNOON

Scheman Building
Atrium

Undergraduate Poster Session

M. Bohorquez, T. Holme, *Organizers*

1:30 - 3:30

313. Optimizing the linker for LAT1-targeted prodrugs to improve potency and cellular uptake. **H. Way, K. Merklin**, J. Campbell, B. Venteicher, H. Chien, C. Colas, A. Schlessinger, K. Giacomini, A.A. Thomas

314. Computational investigations of the radical anion cyclization reaction of 6-hepten-2-one. **N. Lyu**, J.E. Swartz

315. Developing an integrated catalysis experiment for the undergraduate chemistry curriculum. **J.E. Burke, G.J. Koskay, E.A. Reeson**, K.D. Oshin

316. Exploring the scope and limitations of the selective tris(pentafluorophenyl)borane – trialkylsilane reduction of amides, nitriles, azides, and diazo compounds. **C. Kozenski, M. Zamzow**, N.A. McGrath

317. Synthesis and characterization of a DFDPP-CPDT polymer with ethynyl spacers by means of Sonogashira coupling. **H.P. Masching**, J.L. Duffy-Matzner

318. Ambiphilic ligand coordination complexes: Dual mode activation of C-F bonds. **H. Juntunen**, H.S. Rust, A. McNally, J.D. Hoefelmeyer

319. Evaluation of the antiproliferation effects of glucosinolates against human MCF-7 cells. **M.A. Anderson, E.K. Ronning, A.A. Snyder**, J.R. Mays

320. Efforts towards understanding oxoquinocyclopane-guest binding. **E. O'Brien**, J.W. Wackerly

321. Synthesis and characterization of hypoxia-sensitive platinum (IV) prodrug. **C. Aparicio**, T. Nguyen, S. Aryal

322. Construction and characterization of an external cavity diode laser. **C. Larson**

323. Construction and characterization of an iodine saturated absorption spectrometer. **M. Koble**, A. Klose

324. Optimizing the synthesis of a new tetradentate mixed donor ligand. **S.A. Brunclik, C.M. Seong, A. Reuter**, M. Nevins, **E. Marlier**

325. Mode-locking and characterization of erbium-doped ultrafast laser system. **C. Kujawa**, G. Bowman, A. Klose

326. In silico drug design for synthesis of fatty acid synthase I & II inhibitors targeting hepatocellular carcinoma. **A.M. Schuster**, J.L. Kuebler

327. Phenazine-linked porous organic polymers for separation of carbon dioxide. **M. Rabbani**, J. Wallace, A. Byrd, J. Taylor

- 328.** X-ray crystal structure of dihydrolipoyllysine-residue succinyltransferase component of 2-oxoglutarate dehydrogenase complex. **T. Shupp**, R. Baines, M.S. DeVore, N.M. DeVore
- 329.** Computational modeling of anthraquinone macrocycle luminescent chemosensors. **A. Reuter**, B. Vlaisavljevich, A.G. Sykes
- 330.** Synthesis and investigation of pharmaceutical properties of potential drugs against human African trypanosomiasis (HAT). **V. Mashinson**
- 331.** Structural analysis of *OAZ* RNA from *Agaricus bisporus*. **S. Venkatraman**
- 332.** Computational modeling of ICG mediated laser interstitial thermal therapy for cancer treatment. **A. Aryal**, P. Prakash
- 333.** Phosphonic acid functionalized electrospun nanofibers for uranium (VI) uptake. **A. Peroutka**, J. Qian, D.M. Cwiertny, T. Forbes
- 334.** Synthesis of transition metal dichalcogenide catalysts via chemical vapor deposition for catalytic applications. **B. Rudzinski**, D. Maiti, A. Fryer, T. Afaneh, S. Ramani, J. Kuhn, H. Rodriguez-Gutierrez
- 335.** Dependence of stability on sequence in coiled-coil regions of proteins. **W.K. Cross**, E.E. Allgeyer, P.E. Fisk, M.E. Blackburn
- 336.** Evaluation of tartaric acid in wine. D. Agoumba, **J. DeMonte**
- 337.** Synthesis of alginate microgels for cancer cell encapsulation, preservation, and culture. **J. Kuebler**
- 338.** Computational study of monosaccharides: Comparing structural and energetic features of D- and L-sugars. **A. Vice**, **J. Schuely**, **C. Sciortion**, U. Schnupf
- 339.** Putting the cart before the horse: Using a stress-induced plant hormone pretreatment to build stress tolerance. **D. Lowe**, **B. Muhlstein**, R. Pugh
- 340.** Study of HCN1 assembly using Blue Native PAGE. **E. Micka**, **G. Kline**, A. Olson, I. Kees, Q. Zhang, K. Rupert, M.A. Dean
- 341.** Cobalt(II) and manganese(II) metal ion complexes of tnpa with hydroxide bound in the H-bonding pocket. **N. Stumme**, A. Ellern, M. Zart
- 342.** Surface chemistry of crystal violet on titanium dioxide. **K. Boehnke**

TUESDAY MORNING

Scheman Building
299

Undergraduate Poster Session

M. Bohorquez, T. Holme, *Organizers*

8:00 - 10:00

- 414.** Investigating the physical and electronic properties of $(\text{ZnS})_{34}$ coated with oleylamine and benzylamine surfactants. **K.E. Theisz**, S.R. Alvarado
- 415.** Investigation of student attitudes and understanding in an online versus face-to-face introduction to inorganic chemistry course. **H.T. Nennig**, L. Salzer, R.M. Theisen
- 416.** Comparison of student attitudes and performance in an online and a face-to-face inorganic chemistry course. **H.T. Nennig**, L. Salzer, R.M. Theisen
- 417.** Target membrane viscosity controls the sensitivity of antibody dependent phagocytosis. **N. Cronin**
- 418.** Putrescine oxidase immobilization on gold nanostructures and interactions with hydrophilic self-assembled monolayer resists. **T.M. Nguyen**, N.J. Kamathewatta, T.E. Hughes, D.O. Deay, R.T. Lietz, M.L. Richter, C. Tamerler, C.L. Berrie
- 419.** Synthesis of tris[5-cycloimino-thiophenyl-2-ylmethyl]amine for a synthetic model for hydrogen bonding capabilities in the secondary coordination sphere. **A. Call**, M.K. Kamunde-Devonish
- 420.** Lake Michigan ozone study: Characterization and sources of airborne particles. **A. Milani**, D. Hughes, E.A. Stone
- 421.** Exploring novel gas-phase reactivity of *closo*-borane radical and non-radical anions. **E. Johnson**, X. Ma, J. Kuan-Yu Liu, J. Warneke, H. Kenttämäa
- 422.** Examining the effect of molecular dipole on ligand substitution dynamics. **E.A. Reasoner**, M. Wilker
- 423.** Utilizing the Scherrer equation to understand nanocrystalline mixtures. **K.J. Baumler**, M.A. White, J. Vela
- 424.** Sources of airborne particulate matter in Nepal. **T. Li**, M. Islam, K. Mahata, N. Khanal, P. Praveen, S. Adhikari, N.B. Dhital, M. Giordano, B. Werden, A. Gurung, A.K. Panday, P.F. DeCarlo, E.A. Stone
- 425.** Synthesis of unsymmetrical 2,2'-bipyridine derivatives via a phosphorus extrusion. **S.A. Markham**, Z.M. Araki, B.F. Wicker, B. Atwater
- 426.** Stability studies of glycolysis inhibitor prodrugs for cancer. **A. Duncan**, **C. Hall**, A.A. Thomas
- 427.** Curcumin and quercetin polymeric lipid combination formulations for anti-oxidant activity. **C. Ternent**, D. Kumari

428. Mono-fluorinated organosilicon nitrile compound as an additive in LiPF₆ carbonate blend electrolytes for lithium-ion batteries. **S. Su**, L.J. Lyons
429. Nickel chloride as a multifunctional material for overall water splitting and supercapacitor. **J. Poli**, S.D. Bhoiyate, B. Neria, K.S. Siam, P.K. Kahol, R. Gupta
430. Portable 3D-printed imaging particle counter. **A. Boyer**, M. Akella, J.J. Juarez
431. Understanding the role of neutrophils in bovine viral diarrhoea virus (BVDV) pathogenesis. **H. Evans**
432. Synthesis, stabilization, modification, and activity of zinc oxide nanoparticles for biological applications. **A. Freese**
433. Identification of novel substrates of MRP1. **A. Milbauer**, K.J. Rosenthal, A. Sampson, P. Agyemang, S. Iram
434. Enabling confident proteoform identification by validating mass differences characteristic of tri-phosphorylation and adducts of sulfate and acetone. **C.M. Pavelec**, L. Schaffer, M. Scalf, B.L. Frey, M. Shortreed, A. Cesnik, L.M. Smith
435. Withdrawn
436. Versatile, mild, and selective reduction of various carbonyl groups using an electron-deficient boron catalyst. **N.A. McGrath**, C. Kozenski, M. Zamzow
437. Analysis of n-nitrosodiethylamine (NDEA) in tap water using ice concentration linked with extractive stirrer (ICECLES). **M. Marotz**, B.A. Logue
438. Expression and purification of transmembrane serine protease 2 (TMPRSS2) to determine X-ray crystal structure. **M. Gadd**, **N. Holmes**, N.M. DeVore
439. Oxaquinonacyclophanes: Synthesis and application. **N.M. Cooper**, J.W. Wackerly
440. Dopamine quantification in *Caenorhabditis elegans* with HPLC. **V. Vitycharenko**, S. Fretham, M. Wilker
441. Ion concentration polarization in a simple paper device for tear analysis. **D.F. Twedt**, B. Berzina, J. Borchers, R.K. Anand
442. Interactions of pharmaceuticals with hydrophobic surfaces in the aquatic environment. **C.J. Walsh**, M. Subir
443. Cloning, expression, and purification of the catalytic domain of human airway trypsin-like protease. **H. Culbertson**, **K. Cuate**, N.M. DeVore
444. Characterization of the physicochemical properties of choline chloride: Propylene glycol-based deep eutectic solvents in combination with added halides. **E. Haeska**, D.E. Raynie
445. Evaluation of the anticancer drug library to selectively kill MRP1 overexpressing multidrug resistant cancer cells. **K.J. Rosenthal**, A. Milbauer, A. Sampson, P. Agyemang, S. Iram
446. Ion-selective electrodes based on metal-organic supercontainers. **D.S. George**, P. Jampani, N. Netzer, Z. Wang

447. Novel relational optimization of the Pubchem Bioassay database. **A. Aryal**, R. Mazloom, M. Jaber-Douraki
448. Investigation of various wavelengths for phosphorus analysis in surface water samples by ICP-OES. **D. Vickers**, J.W. Ejniak
449. Ligand-centered borenium reactivity in triaminoborane-bridged diphosphine complexes. **C. Kirkvold**, K. Lee, S.R. Daly, B. Vlasisavljevich
450. Kinetics of functionalization of mesoporous silica nanoparticles with organotrialkoxysilanes. **H. Wang**, J.S. Manzano, I.I. Slowing
451. Substituent effects in compounds with NNSN motif: Towards nanomolar activity against MRSA. **T. Shrestha**, K. Eschliman, R. Roberts, A. Delpé Acharige, F. Wolschendorf, S.H. Bossmann
452. Investigating heteroscorpionate ligands as a catalyst template for use in ATRA reactions. **E.A. Khoury**, K.D. Oshin
453. Photo-active naphthalimide-drug compound synthesis and characterization. **T. Divis**, J.E. Elbert, K. Parrott, H. Lovstad, W. Rouse