

Re-Inventing Ourselves: Hope for the Future

November 4, 2023 | 9 a.m. - 4 p.m. University of Bridgeport, CT

About MACUB

Metropolitan Association of College and University Biologists (MACUB) is a professional organization of college and university biologists in the New York-New Jersey-Connecticut metropolitan region. Founded in 1967, MACUB seeks to stimulate dialogue among college and university biologists, provide members with a forum to present the results of their scientific and educational research, and resolve transfer and matriculation problems between two- and four-year colleges. Recently, MACUB initiated a number of grants and awards available to its members in support and recognition of research and scholarship. MACUB, a federally recognized and tax-exempt non-profit corporation registered in New York States, is governed by an Executive Board elected by its members. The actions of the Board are governed by the Constitution and Bylaws of the Association.

Agenda of Events:

Continental breakfast and poster set-up: 7:30 a.m. - 9 a.m. Keynote speaker #1: 9 a.m. - 9:45 a.m. Concurrent morning sessions: Member, vendor, and student presentations 10 a.m. - 12:30 p.m. Lunch and keynote speaker #2: 12:30 p.m. - 2:30 p.m.

Awards presentation and ice cream social: 2:30 p.m. - 4 p.m.





This conference is dedicated to Gary Sarinsky, who was the president for MACUB from 1994-2014. He built up the organization from just twenty biology faculty members in attendance, to the much larger group of faculty and students that we see here today. He was able to procure speakers such as Eugenie Clark (ichthyologist), Francis Collins (geneticist and former director of NIH), Laurie Garret, (author of the Coming Plague), Rita Colwell (former director of NSF), Bonnie Bassler (quorum sensing researcher) and many others. In the "olden days" there were a team of us (Pam Carlson and Carol Biermann come to mind) who would personally go to various colleges around the city and put flyers in mailboxes and meet biology professors in person. He has mentored many students through the years including in the Medgar Evers/Kingsborough Bridges to the Baccalaureate program and was a multiple recipient of a grant from the New York State Education Department: "Collegiate Science & Technology Entry Program" or C-STEP. He worked closely with Michael Palladino, (Vice-Provost at Monmouth University), and Ed Catapane and Margaret Carroll, at Medgar Evers College on oyster biology and other projects.

Gary always walked around and talked to as many people as he could at each table at each annual MACUB conference. He always had a kind word or a joke for everyone. At 6'4" he was quite a presence. (He also played basketball at Yeshiva University in college for the Maccabees---I would have liked to have seen that!)

We will miss Gary greatly---he was really the heart and soul of MACUB for many years!



Gary Sarinsky at MACUB at Monmouth University (2019)



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About University of Bridgeport

Welcome to University of Bridgeport. Founded on the concept of equitable access to education, University of Bridgeport began as the first two-year junior college in the state of Connecticut. UB has now grown into an institution of higher education offering a wide range of undergraduate, graduate, and doctoral programs that allow students to explore their passions and embark on rewarding career paths. Nestled in the coastal city of Bridgeport, Connecticut, UB celebrates a global community of learners from more than 30 countries around the world who enrich UB's campus with a myriad of perspectives and experiences. UB's esteemed faculty fosters a dynamic and supportive learning environment while preparing the next generation of innovators and critical thinkers to become the leaders of tomorrow in an increasingly interconnected world. As you explore University of Bridgeport, you'll discover a vibrant campus life, cutting-edge hands-on learning opportunities, and a strong network of alumni who have gone on to achieve success in life and leadership.





Dear Attendees of the 56th MACUB Conference,

We warmly welcome you to the 56th MACUB conference, hosted at the University of Bridgeport in Bridgeport, Connecticut. We are delighted you are here on our campus, situated just minutes away from the picturesque Long Island Sound, as we come together to celebrate the outstanding research conducted by our students and colleagues. It is with great satisfaction that we report the resounding success of yet another edition of this conference. We have received two hundred registrations, eighty-two poster presentations, and eight faculty oral presentations. On behalf of the entire University of Bridgeport community and the MACUB Executive Board, we wish to express **our congratulations** to the students and their mentors for their exceptional research contributions and the immense effort invested in creating their presentations.

We trust that you will find this conference to be an enlightening, educational, and enjoyable experience. You will have the opportunity to attend lectures by world-renowned keynote speakers, peruse the impressive student poster presentations, and participate in member presentations of outstanding quality. Additionally, the conference provides ample networking opportunities, accompanied by well-prepared meals and a delightful ice cream social.

Our heartfelt thanks are extended to the UB 2023 MACUB organizing committee for their dedication in making this event successful. We express our gratitude to Dr. Kathleen Nolan and Dr. Fernando Nieto for their invaluable guidance, to our treasurer Margaret Carroll for her adept management of registration, and to Dr. Ed Catapane for overseeing the abstract submission process for publication in the MACUB journal, *InVivo*.

We also extend our appreciation to UB's Marketing and Communications Director, Abigail Levandoski, and her team for their excellent work in creating and managing our web page, event messaging, and the layout of the MACUB program. Recognition is owed to our Events Manager, Trina Henderson, whose remarkable organizational skills ensured that every detail for the conference was executed flawlessly, and thanks to Dr. Allison Garris, Dean of Admissions, and her admissions team for donating the swag bags. We extend our gratitude to Elizabeth Alves, our Biology Department Laboratory Supervisor, for her invaluable assistance in coordinating the ice cream social. We must not forget to acknowledge the help of our Facilities team and staff, whose hard work provided us with excellent accommodations.

Last but certainly not least, we wish to convey our deep gratitude to our Provost, Dr. Manyul Im, the Dean of the College of Science and Society, Amy Nawrocki, and former Dean Dr. Kathleen Engelmann (retired) for their generous support in hosting this conference.

Without further delay, let MACUB 2023 begin!

Sincerely,

Dr. Spiros Katsifis & Fred Ferraro 2023 MACUB Conference Co-Chairs





Keynote Speakers:



Aris N. Economides, Ph.D.

Vice President, Genome Engineering Technologies and Skeletal Diseases Therapeutic Focus Area, Regeneron Pharmaceuticals

Dr. Aris N. Economides received his Ph.D. in biochemistry from Michigan State University in 1992, and promptly joined Regeneron Pharmaceuticals. He currently holds the position of Vice President, leading two groups: Genome Engineering Technologies, and Skeletal Diseases Therapeutic Focus Area. In

addition, he is a co-founder and Regeneron Genetics Center (RGC), where he is also Head of Functional Modeling. Dr. Economides co-invented Cytokine Traps, VelociGene®, and VelocImmune®, all part of an integrated methodology for target discovery, validation, and the generation of biologic drugs such as the IL1 and VEGF traps, as well as therapeutic antibodies. More recently, he had been developing a new method for Enzyme Replacement Therapy (ERT), one that addresses two of the main limitations of current ERT, namely immunogenicity and inefficient uptake by the tissues most affected in the corresponding lysosomal diseases. As part of his involvement with the RGC, Dr. Economides had been working to elucidate the molecular pathophysiology of genetically-driven disorders. An example in his work in Fibrodysplasia Ossificans Progressiva, where he and his team discovered a novel mechanism that explains important aspects of FOP's pathophysiology and pinpoints a new potential route to therapy.





Keynote Speakers:



Dusan Bogunovic, Ph.D.

Director of the Center for Inborn Errors of Immunity and Icahn School of Medicine at Mount Sinai, New York, NY, Professor in the Department of Oncological Sciences and Precision Immunology Institute, Mindich Child Health and Development Institute, Icahn School of Medicine at Mount Sinai, New York, NY

Bogunovic, a UB alum, received his Ph.D. in 2009 from New York University School of Medicine's Molecular Oncology and Immunology training program,

Sackler Institute, New York, NY. Upon completion of his postdoctoral fellowship at the St. Giles Laboratory of Human Genetics of Infectious Diseases, the Rockefeller University, New York, NY, he was appointed as professor in the Department of Oncological Sciences and Precision Immunology Institute at the Mindich Child Health and Development Institute, Icahn School, of Medicine in Mount Sinai, New York, NY. Dr. Bogunovic is also the Director of the Center of Inborn Errors of Immunity at Icahn School of Medicine in Mount Sinai, New York, NY.

Bogunovic's laboratory focuses on the study of human immunogenetics. His research is focused on improving our understanding of the human immune system. Dr. Bogunovic's lab has defined an essential role for free intracellular ISG15 and USP18 in the regulation of type I Interferon induced inflammation, which was reported in Nature. He also discovered that ISG15 deficient individuals have augmented antiviral responses, which was reported in Nature Communications. His lab identified USP18 deficient individuals and detailed the molecular mechanisms behind the Type I IFN inflammation. In 2020, in NEJM he described the first USP18 patient who was successfully treated with a JAK1 inhibitor.

Bogunovic's work was ranked among the "Top 10 Discoveries with Potential to Change the World" by Scientific American in 2016 and has inspired his own drug discovery pipeline in the field of broad-spectrum antivirals, which allowed him and his team to spin off a biotech company which now has Blue Knight designation by BARDA and is funded by STTR. Dr. Bogunovic is at the forefront of immunogenomic research, and as such, he had been invited to speak at numerous institutions across the U.S. and the world. Work performed in his laboratory has had a lasting local, national, and international impact.





T**ime/Room no**. Presenter Title of the Presentation Red Oak Seedling Survival at Alley Pond 10:00 AM Stalter, Richard; Meherin, Arufa Park, Queens County, New York Carlson # 153 10:20 AM Nieto, Fernando; Awong-Taylor, Helping Departments to Transform Carlson # 214 Judy; Lindsay, Sara; Elfring, Lisa **Undergraduate Education** Optimism Toward a Full Classification of 10:40 AM Cohan, Frederick; Wang, Jocelyn; **Ecotype Diversity within Bacterial Species** Krizanc, Danny Carlson # 252 PLD1 gene duplication in 36% of human lung 11:00 AM squamous cell carcinomas (TCGA) Carlson # 253 Frias, Maria 11:20 AM Cancer Chemopreventive Action of Carlson #153 Uddin, Md Khabir; Fishbein James Dithiolethiones A WORKSHOP: The Human Explorer, - guided by EVOLUTION Exploring Genes, Culture, and AI in the 11:40 AM **Pursuit of Happiness** Carlson #214 Haque Nasreen S.

Member Presentation Schedule





12:00 PM Carlson # 252	CRAWFORD, SARAH; LESLEY, GERALD	Combined Treatment Of Estrogen-Receptor Positive Breast Microtumors with 4- Hydroxytamoxifen and Novel Non-Steroidal Diethyl Stilbestrol-Like Analog Produces Enhanced Preclinical Treatment Response and Decreased Drug Resistance
12:20 PM	Chen Yuwei; Sun W. Jonathan; Renfrew Douglas P. : Montclare	Appending Viral Infiltration Tags onto Supercharged Coiled-coil Proteins to
Carlson # 253	Kim Jin	Empower Endosomal Escape





56th Metropolitan Association of College and University Biologists (MACUB) Conference November 4, 2023 University of Bridgeport

Member Presentation Abstracts

1. Red Oak Seedling Survival at Alley Pond Park, Queens County, New York

Stalter, Richard; Meherin, Arufa St. John's University

The objective of this study was to document Red Oak (Quercus rubra L.) seedling survival at Alley Pond Park, New York, 2018-2023. The study was initiated at 3Red Oak dominated sites in Alley Pond Park in 2018. Red Oak seedling stems were marked with white paint and yearly survival was recorded from November, 2019 to November, 2023. One year survival was high at all 3 sites ranging from 90 % to 98%. Yearly survival declined precipitously in the second year, and significantly by the 5th year. Light intensity may be the key to seedling survival as no surviving Red Oak saplings were observed near site 1, a low light intensity site burned 20 years ago.

2. Helping Departments to Transform Undergraduate Education

Nieto, Fernando; Awong-Taylor, Judy; Lindsay, Sara; Elfring, Lisa SUNY Old Westbury

Higher Education is on a trajectory that will focus more on recognizing how well institutions educate students rather than an institution's name recognition, Carnegie classification, or history. This value-based shift has the ability to level the playing field for all institutions by recognizing how well faculty engage in pedagogical best-practices and lead educational innovations that support learner outcomes and student success. The Partnership for Undergraduate Life Sciences Education (PULSE) is a lever of change that is helping drive the transformation of higher education in life sciences. Through its tools (PULSE Rubrics and Faculty Attitudes and Readiness Survey) and programs (Ambassadors Workshops, Recognition Program and Regional Networks), PULSE provides academic departments with resources, skills, and processes to align their undergraduate programs with national education initiatives to develop inclusive, student-centered, evidence-based teaching and learning practices, while removing barriers to access, equity, and inclusion. The PULSE Ambassadors Program deploys teams of trained facilitators to guide a department in crafting a shared vision and action plan for change. Using PULSE tools, the Recognition Program provides a process for departmental review and self-assessment and includes site visits to departments, detailed feedback reports, and follow-up support. Data from PULSE programs highlight common goals and areas for growth among departments nationwide. Visit our poster to learn how PULSE's Recognition and Ambassadors programs can be a lever of change for your institution.

3. Optimism Toward a Full Classification of Ecotype Diversity within Bacterial Species

Cohan, Frederick; Wang, Jocelyn; Krizanc, Danny Wesleyan University

Background. We explore how genomic approaches bring within reach a completionist agenda for bacterial systematics, enabling systematists to discover and classify all bacteria at the species level, as well as all the infraspecific ecotypes within species. Ecotypes are defined to be ecologically distinct from one another and thereby able to coexist indefinitely into the future; also, they are each cohesive through periodic selection events that purge the diversity within ecotypes. Hypothesis. We test using genomic evidence whether there may be very few ecotype lineages within a species that can coexist into the indefinite future. Methods. We have isolated strains of three species of Bacillus from soil in Death Valley National Park, from various distinct habitats along an elevational gradient. We used the algorithm Ecotype Simulation to demarcate the strains into ecotypes, through falling into distinct sequence clusters based on the full core genome. We used a rarefaction approach to determine whether the number of ecotypes demarcated depended on the number of genes sampled. Results. We found that the ecotypes we demarcated are ecologically distinct from one another, based on differences in their habitat associations. Based on the rarefaction analysis, whether 1 or 500 genes were used, the number of ecotypes remained the same (e.g., 6 ecotypes in the case of B. spizizenii). That is, the small number of ecotypes is not an artifact of low molecular resolution. Although there are thousands of ecologically distinct lineages within the demarcated ecotypes, the number of lineages that can coexist as ecotypes is small. Conclusion. If Bacillus is typical for ecotype dynamics, the number of ecotypes within species taxa is not the infinitude suggested by the number of ecologically distinct lineages, but rather it is the limited (and manageable) number of lineages subject to cohesion under periodic selection.

4. PLD1 gene duplication in 36% of human lung squamous cell carcinomas (TCGA)

Frias, Maria St. Francis College

The major hallmarks of cancer are uncontrolled cell growth, division and survival, sustained by altered metabolism. Phospholipase D (PLD) controls all these cellular functions, therefore we hypothesized that PLD genomic alteration leads to cancer development.

To test our hypothesis, we searched for PLD1/2 genomic alterations in The Cancer Genome Atlas (TCGA) dataset. TCGA was a joint effort between The National Human Genome Institute and The National Cancer Institute of the National Institutes of Health between 2005 and 2018. The dataset of TCGA has genome sequences of 20,000 human samples from cancer and matching normal tissue, including 32 different types of cancer.

In this study, we found that the alteration landscape of PLD1 and PLD2 genes is very different. PLD1 is altered in 8% of TCGA cancer patients, while PLD2 is altered in 2%. The main PLD1 genomic alteration is amplification (gene duplication), while the main PLD2 alteration is single-base mutation. Crucially, PLD1 gene duplication is present in 36% of lung squamous cell carcinomas. PLD1 genomic alterations reduce patient median survival by 20 months (almost 2 years). PLD2 had no impact on patient survival.

Some PLD1 point mutations, such as E780K/Q, warrant further investigation since there is a critical switch in amino acid side chain charge in a catalytic domain of the enzyme.

This study provides the first attempt at determining the prevalence of PLD genomic alteration in human cancer. Because PLD controls cellular physiology as part of signaling pathways, future studies will evaluate the relationship between PLD and other gene alterations in the same pathway, and how that contributes to cancer development.

5. Cancer Chemopreventive Action of Dithiolethiones

Uddin, Md Khabir; Fishbein James

College of Science and Society, University of Bridgeport

Cancer chemoprevention involves the use of natural or synthetic compounds to reduce the risk of developing cancer or potentially inhibit the carcinogenic process. We are engaged to understand the molecular basis or mechanism of the cancer chemopreventive action of dithiolethiones (1.2-dithiole-3-thiones). Oltipraz 1, is a member of a class of compounds called dithiolethiones and has been in phase II clinical trials for the prevention of aflatoxin-induced hepatocellular carcinoma. Dithiolethiones are believed to afford protection from electrophilic and oxidative stress because they raise the labels of many phase 2 enzymes such as glutathione S-transferases (GSTs), and NAD(P)H, quinone oxidoreductase (NQO1). These enzymes trap reactive electrophiles and reactive oxygen species and conjugates that prepare metabolites for export. The induction of phase 2 enzymes by dithiolethiones is mediated, at least in part, by antioxidant response element (ARE) that is found in the upstream regulatory region of many phase 2 genes. The transcription factor Nrf2 which binds to the ARE, appears to be essential for the induction of prototypical phase 2 enzymes.

Oltipraz, 1 is extensively metabolized, mainly to the dimethylated metabolite, 2, which is not an inducer of phase 2 enzymes. It has been shown that the major unmethylated metabolite, 4 is a phase 2 enzyme inducer with a potency on par with oltipraz itself. It was suggested that monomethylated metabolites, 5 and 6 that can be found under subsequent enzymatic methylation of biologically active, 4, as other alternate metabolites prior to form the dimethylated metabolite, 2.

Therefore, our interests are focused to the synthesis of prodrugs 8 and 11, to serve as alternative precursors to the monomethylated metabolites, 5 and 6, of the cancer chemopreventive oltipraz, 1, to test whether they possess similar biological activities. In this presentation, we will discuss the synthetic strategy, structure elucidation, thiolytic chemistry, and the quinone-oxidoreductase (NQO1) activity of the monomethylated metabolites, 5 and 6, of the oltipraz.

6. A WORKSHOP: The Human Explorer,- guided by EVOLUTION Exploring Genes, Culture, and AI in the Pursuit of Happiness

Haque Nasreen S.

New York City College of Technology in partnership with Genomic Observatory

"The Human Explorer - Guided by Evolution" is an immersive workshop that embarks on a transformative journey into the intricate realms of genes, culture, and artificial intelligence (AI) within the context of well-being and happiness.

Today, there is a deeply troubling upsurge in young individuals who are withdrawing from society, experiencing deteriorating mental health, and even contemplating self-harm or suicide as they struggle to make sense of their situation.

This workshop aims to empower participants, especially students, with the tools and insights needed to navigate the complexities of modern life. Through a blend of interactive session and group discussions, participants explore evolutionary insights into human behavior, the impact of culture on individual identity and well-being, and the transformative potential of AI. They are guided to develop essential skills of awareness, curiosity, and empathy, enabling them to enhance their daily interactions and problemsolving capabilities. Furthermore, participants are encouraged to define their personal purpose and align it with their actions, fostering a sense of fulfillment and purpose in their lives. The workshop also aims to create a supportive community of Human Explorers, dedicated to ongoing learning and growth in the NY metropolitan area.

7. Combined Treatment Of Estrogen-Receptor Positive Breast Microtumors with 4-Hydroxytamoxifen and Novel Non-Steroidal Diethyl Stilbestrol-Like Analog Produces Enhanced Preclinical Treatment Response and Decreased Drug Resistance

Crawford, Sarah; Lesley, Gerald Southern Connecticut State University

This research is a pre-clinical assessment of anti-cancer effects of novel non-steroidal diethyl stilbestrollike estrogen analogs in estrogen-receptor positive/ progesterone-receptor positive human breast cancer microtumors of MCF 7 cell line. Tamoxifen analog formulation (Tam A1) was used as a single agent or in combination with therapeutic concentrations of 4-hydroxytamoxifen, currently used as a long-term treatment for the prevention of breast cancer recurrence in women with estrogen receptor positive/ progesterone receptor positive malignancies.

At concentrations ranging from 30-50 microM, Tam A1 induced microtumor disaggregation and cell death. Incremental cytotoxic effects correlated with increasing concentrations of Tam A1. Live tumor microscopy showed that microtumos displayed diffuse borders and substrate-attached cells were rounded-up and poorly adherent. A complete cytotoxic effect was observed using 40-50 microM Tam A1 with time course kinetics similar to 4-hydroxytamoxifen. Combined treatment with TamA1 (30-50 microM) and 4-hydroxytamoxifen (10-15 microM) induced a highly cytotoxic, synergistic combined treatment response that was more rapid and complete than using 4-hydroxytamoxifen as a single agent therapeutic. Microtumors completely dispersed or formed necrotic foci indicating a highly cytotoxic combined treatment response.

Moreover, breast cancer microtumors treated with both 4-hydroxytamoxifen and Tam A1 displayed lower levels of long-term post-treatment regrowth, a critical parameter of primary drug resistance, than observed for 4-hydroxytamoxifen when used as a single agent therapeutic. Tumor regrowth at 6 weeks post-treatment with either single agent 4-hydroxy tamoxifen, Tam A1 or a combined treatment was assessed for the development of drug resistance. Breast cancer cells treated with both 4-hydroxytamoxifen and Tam A1 displayed significantly lower levels of post-treatment regrowth, indicative of decreased drug resistance, than observed for either single treatment modality. The preclinical data suggest that combined treatment involving the use of tamoxifen analogs may be a novel clinical approach for long-term maintenance therapy in patients with estrogen-receptor positive/progesterone-receptor positive breast cancer receiving hormonal therapy to prevent disease recurrence. Detailed data on time-course, IC50 and tumor regrowth assays post- treatment as well as a proposed mechanism of action to account for observed synergistic drug effects will be presented.

8. Appending Viral Infiltration Tags onto Supercharged Coiled-coil Proteins to Empower Endosomal Escape

Chen Yuwei; Sun W. Jonathan; Renfrew Douglas P.; Montclare Kim Jin New York University Tandon School of Engineering

Short-interfering RNA (siRNA) therapeutics display immense potential to combat diseases by suppressing faulty genes responsible for producing pathological proteins; however, the number of commercial siRNA products authorized by the FDA remains limited, with only four currently available. This dearth in technology stems from the broad array of extra-/intra-cellular hurdles that hinder efficient siRNA delivery. Consequently, large milligram dosing regiments are required to sustain high concentrations of intracellular siRNA over time. Boosting siRNA loading and delivery efficiency through vector engineering could amplify the potency of smaller siRNA doses, allowing for a reduction in the quantity of expensive siRNA needed to achieve the desired therapeutic effect. To this end, our lab has been developing non-viral lipoproteoplex (LPP) nanoparticles that rely on a positively supercharged coiled-coil protein called N8 to condense RNAs, facilitate endosomal escape, and improve delivery efficiency. Currently, the pH-responsive His10 tag of N8 is thought to passively sequester protons in acidified late endosomes, creating osmotic imbalances in these compartments that lead to endosomal rupture and payload release. We hypothesize that appending viral TAT and HA2 peptide sequences will further enhance cellular uptake and endosomal membrane disruption in a more active manner without compromising secondary structure or ability to bind siRNAs.

The resultant modified proteins were subjected to analytical characterization via sodium dodecyl-sulfate polyacrylamide gel electrophoresis, matrix-assisted laser desorption/ionization time-of-flight—time-of-flight mass spectrometry, and circular dichroism spectroscopy. Finally, LPP nanoparticles loaded with new proteins and siRNA were fabricated, revealing the addition of TAT and HA2 viral tags did not impact the proteins' abilities to form discrete electrostatic complexes.

Member Abstracts can also be found online at: https://www.bridgeport.edu/files/docs/macub/ member-presentation-abstracts.pdf

Student Poster Presentations

Poster Category Legend: Biochemistry, Biophysics and Biotechnology (**BBB**); Clinical (**C**); Developmental Biology and Genetics (**DBG**); Environmental Biology and Ecology (**EBE**); Microbiology and Immunology (**MI**); Physiology and Neuroscience (**PN**).

Poster #	Author Name(s)	Poster Presentation Title
1 BBB	Bah, Kadiatou; Sarosiek, Kristopher; Inde, Zintis	Role of BAX and BAK in Apoptotic Priming
2 BBB	Zafar, Wajiha; Denton, Richard W.	Synthesis of Novel Isoxazolidine-mimetics of DAG-lactones: In Search of New and Specific Protein Kinase C Agonist
3 BBB	Rumora, Ana; Hopkins, Liliana; Yim, Kayla; Baykus, Melissa	Microbial Fuel Cells
4 BBB	Nagapurkar, Akash R.; Sun, Jonathan W.; Renfrew, P. Douglass; Montclare, Jin Kim	Developing a Computational Workflow to Model and Target Viable Supercharged States of siRNA-delivering Coiled-coil Proteins
5 BBB	Tariq, Hafiz; Spence, Nickayla; Felix, Rose; Johnson, Qiaxian; Chauhan, Bhanu P.; Chauhan, Moni; Ghoshal, Sarbani.	Synthesis and Anticancer Properties of Polyrhodanine Copper Nanocomposites.
6 BBB	Nidhi Chandra Kannekanti	The protective effect of commercial Moringa Oleifera extract on Chinese Hamster Ovary cells when treated with Chromium
7 BBB	Zhang, Yi; Tamari, Farshad	DNA Extraction in Hydrangea macrophylla using the Edwards Buffer Method: DNA Extraction of Small Tissue Quantities using
8 BBB	Munn, Laura; O'Connor, Michael; Multani, Harpreet; Scanze, Nina	Leptin exacerbates inflammatory cytokine production within a 3D mouse model of osteoarthritis
9 BBB	Talmadge, Ta'Meir; Yoh, Andrea; Rivera, Nilka Z.; Wallace, Connie L.; Marquez, Felipe; Asare, Belinda; Zhou, Chun	Mechanistic study of the impact of designed mutagenesis on bacterial β-Glucosidase B

Poster #	Author Name(s)	Poster Presentation Title
10 BBB	Elizabeth Bahar; I. Alexandra Amaro; Mariana Wolfner	Seminal Fluid Proteins and Post-Mating Responses: Exploring Protein Binding and Pathways in Aedes aegypti
11 BBB	Ishwarya Krishna, Jessica Wong, Jacob Kronenberg, Maria Kulapurathazhe, Dustin Britton, Nada Haq-Siddiqi, and Jin Kim Montclare	Protein Engineered Hydrogels for Wet Adhesives
12 BBB	Hintelmann, Thomas; Enny, Olivia; Schievelbein, Mika; Tilton, James Tilton; Ouellet, Jonathan	Creating a Cost Efficient Method to Determine Theophylline Riboswitch Activation
13 BBB	Baiju, Rabina	Effect of mineral sunscreen in protecting plasmid DNA damage induced by UV light
14 BBB	Pellerito, Madison; Ouellet, Jonathan	Catalysis Chemistry of the I-R3 DNA Enzyme through Ion-Promoted Cleavage
15 BBB	Moparthi,Naveen;Mudu,Pavan;Muttineni, Keerthan; Kandi,Sindhu	Development and Porosity Analysis of PLA Polymer Scaffold for Tissue Engineering Applications
16 BBB	Houseknecht, Alexa; Rosen, Maxwell; Jose, Davis	Investigating local conformational changes from ligands on G-quadruplex complexes using fluorescent base analogues
17 BBB	Farhath Ayesha	The Interaction of Glutathione with Nickel, and Chromium in the Induction of Cytotoxicity in Chinese Hamster Ovary Cells
18 BBB	Eleanor Parks-Orr and Jonathan Ouellet	Spinach Aptamers
19 BBB	Deirdre Campbell; Jonathan Ouellet	Isolation of an Aptamer Selective to Glucose
20 BBB	Oliver, Crystal; Ghoshal, Sarbani; Sullivan, Regina; Rajapakse, Harsha	Extraction of Low Molecular Weight Proteins Derived From Murraya koenigii (L.) for their Bioactivity

Poster #	Author Name(s)	Poster Presentation Title
21 BBB	Abdur-Rehman Hussain; Taimoor Chaudhry; Jeleeta Jolly; Azza Gener; Muntaha Ahmad; & Dr. Jacqueline Keighron	Enhancing the stability and activity of glucose oxidase through interaction with highly curved gold nanoparticles
22 BBB	DuBois, Cora; Burdowski, Allen; Kita, Katsuhiro	Combination of nano-hydroxyapatite/gelatin cryogels and 3D printing to manufacture scaffolds mimicking bone microenvironment
23 BBB	Trinh, Anh; Awawdeh, Abdelrahman; Cardenas, Samanta; Vetterlein, Amanda; Thompson, Robert	Spatial and Temporal Targeting of Cre/LoxP Recombination Using Photocaged 4- Hydroxytamoxifen
24 BBB	Pathak, Samya; Ghoshal, Sarbani	Identification of Genetically Modified Plant Products Using PCR
25 C	Itani, Riad ; Gonzalez, Zenovia ; Matthews, Janae ; Mahase, Syann ; Alokam, Yacoub ; Atiq, Daniyal ; Frias, Maria A.	Discovery of PLD Genomic Alterations in Human Cancer
26 C	Steve Joseph Kuppili; R Santosh Kumar; Prabir K. Patra ; Peiqiao Wu	Design, Optimization and Evaluation of Rifampicin Fast Dissolving Tablets Employing Starch Tannate by Direct Compression Method
27 C	Solis, Valeria ; Morkos, Celine; Vilchis-Ibarra, Cindy ; Kita, Katsuhiro	FLG mutations as a potential biomarker candidate to predict the risk of pancreatic cancer
28 DBG	Marin, Daisy; Hinkley, Craig S.; Nielsen, Lilja	The FOXL2 Gene is Present in the Eastern Oyster (Crassostrea virginica)
29 DBG	Elise Visser	The Influence of St8Sia1 During the Embryonic Development of Zebrafish
30 DBG	Fitzgerald, Madelyn	Kv2.1 and FAK: Protein Colocalization Visualized in The Embryonic Hindbrain of Zebrafish
31 DBG	Christopher Colavito	Investigating the Requirement of Sialic Acid During Zebrafish Neurodevelopment

Poster #	Author Name(s)	Poster Presentation Title
32 DBG	Perrillo-Sullivan, Stephen; Nicolas, Antoine	Mitochondrial Genomics of Apiaceae Subfamily Azorelloideae
33 DBG	Santospirito, Julianne; Nicolas, Antoine	Comparison of Three Plant DNA Extraction Methods Using Parsley and Largeleaf Marsh Pennywort
34 DBG	Gunaratnam, Kughan; Nicolas, Antoine	Comparing Three Approaches to Breaking Down Cell Walls for DNA Extraction from Historical Plant Samples
35 DBG	Arora, Bhavya; Shahzad, Zainab, Ahmad, Haziq; Akter, Tahamina; Bellantoni, Samantha; Hanson, Guevanie; Hussain, Syed; Koretz, Anna; Muralidhar, AJ; Smith, Steven; Traficante, Mirza, Waris; Miura; Wala, Zhakai; Nissen, Jillian	Investigating gene functions in the F1 cluster phage Akhila
36 DBG	Tramell, Abigail ; Kennell, Jennifer	Characterization of the CG5577 gene in Drosophila melanogaster
37 DBG	Rocenovic, Danilo; Wydner, Katherine	Common Yellowthroat Song Variability and the Effects of Anthropogenic Noise
38 DBG	Gubitz-Hess, Eva; Kennell, Jennifer	Characterization of CG17294 in Drosophila melanogaster through mutagenesis and analysis of its conservation across Drosophila species
39 DBG	Morkos, Celine; Vilchis-Ibarra, Cindy; Solis, Valeria	Y Chromosome gene, KDM6A a potential biomarker gene in various types of Cancer
40 DBG	Vilchis-Ibarra, Cindy ; Solis, Valeria ; Morkos, Celine ; Kita, Katsuhiro	Discovery of a new mutation hot spot in a microtubule plus-end binding protein, CLIP-170
41 DBG	Asare, Belina; Canger, Anthony	Expression of Actin Regulatory Proteins Paxillin, Zyxin, and Moesin during Neuronal Differentiation

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43 DBG	Apuango, Kiara; Jain, Chandna; Bradley- Ortiz, RJ; Mujica-Urzua , Patricio	Isolation and Culture of Cardia Cells from the Chicken Embryo
44 EBE	Liliana Hopkins; Kayla Yim; Ana Rumora; Melissa Baykus, Luisa Martinez	Genetic Mapping of a Forest Microbiome
45 EBE	Liang Xiao, Fanny; Colon, Christina P.	Eastern Coyote (Canis latrans x lycaon) in NY: Will This New Predator Impact Bird Vocalizations on Long Island?
46 EBE	Cuevas, Zitlali	Lichen and Air Pollution
47 EBE	Lutfur, Lutfur; Vasquez, Claudia; Eldesouky, Amal; Ortiz, Adam; Cardenas, Irma; Tessler, Michael; Herstoff, Emily	Zooplankton and Microplastics in Brooklyn Bridge Park
48 EBE	Cardenas, Irma J.; Jules, Jurneal; Luna, Paula; Abdelhalem, Ali M.; Cunningham, Seth W.; David, Felix J.; Herstoff, Emily M.; Tessler, Michael;	Suburban Soil Conservation with Backyard Meadows
49 EBE	Eldesouky, Amal; Cardenas, Irma; Lutfur, Lutfur; Vasquez, Claudia; Ortiz, Adam; Richards, Eva; Tessler, Michael; Herstoff, Emily	Leaf galls in Green-Wood Cemetery, Brooklyn NY
50 EBE	Rocenovic, Danilo; Quisbert, Helberth; Rodriguez, Katherine; Bautista, Isabelle; Wydner, Katherine	Project FeederWatch, Habitat Restoration, and Native Species: If You Build It, Will They Come?
51 EBE	Roman, Isiah; Nicolas, Antoine	Plastome Phylogenomics of the Pennywort Genus Hydrocotyle
52 EBE	Mingone, Mario; Nicolas, Antoine	Chloroplast Phylogenomics Of Apiaceae Subfamily Azorelloideae

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54 EBE	Osowiecki, Sabrina; Keena, Melody	Determining the Effects of Prolonged Starvation on the Survival, Growth, and Development of Lymantria dispar
55 EBE	Sekyere, Michael; Kang, Seokyoung; Dweck, M K, Hany	Acid Taste Sensing in Spotted Wing Drosophila
56 EBE	Aramis Medina	The impact of rare recruitment events & the analysis of genetic variation among sub- populations in Cenchritis muricatus
57 EBE	Ali, Ashley; Medor, Gabrielle; Rene, Dorothee; Rivera, Noemi	Water Quality Testing of Enterococcus Levels Along the East River
58 EBE	Diamond-Huey, Tosha	Streamlining germination of natives for rewilding
59 MI	Beas Romero, Agustin; Cabail, Zulema	Meta-inflammation Increases the Migration and Invasiveness Potential of Prostate Cancer Cells
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61 MI	Djedji, Chloe; Gonzalez, Norma; Jimenez, Raul; Hana, Morris; Aqeel, Abdul	Determination Antibiotic Resistance Pattern in Human Normal Microbiota Post-COVID-19 Pandemic
62 MI	Colares, Isabella; Atiq, Daniyal; Reece, Brianna; Frias , Maria A.	Water Quality of the New York City East River
63 MI	Williams, Z'Dhanne; Hernandez, Edwin; Evans, Jodi F	Optimizing an Imaging Protocol to Quantify Mitochondrial Transfer
64 MI	Gonzalez, Zenovia; Mlynarczyk, Coraline	Generation of pre-clinical models of BTG1 mutated diffuse large B cell lymphomas to help develop rational targeted therapies

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67 MI	Narchal, Gurvin; Oddman, Kevin	Investigating the effects of consumption of a high sugar content diet on the diversity of the oral microbiome
68 MI	Goyvaerts, Noor; Cepeda, Myah; Piotrowski, Natalia	Effects of Quorum Sensing Molecules on the Adhesion Properties of Newly Isolated Yeast Strains
69 MI	Kaczmarski, Michael; Oommen, Nigel	Comparative Analysis of Illumina MiSeq and Oxford Nanopore Sequencing for Bacteriophage Genomes: Assessing Accuracy and Efficacy
70 MI	Gadula, Srinidhi; Patel, Yamini Bhaveshbhai; Qiu, Jerry; Hwang, Alex; Nagarwala, Hamza	The Isolation, Characterization, and Optimization of Bacteriophages Targeting Clinical Isolates of Staphylococcus Aureus
71 MI	Palermo, Samantha; Kloc, Anna	Analysis of Parvovirus B19 mutations in human heart tissue layers
72 PN	Mansfield, Kera; Acheampong, Joana; Foster, Tia, Carroll, Margaret A.; Catapane, Edward J.	Western Blot Study of the Different Neurotoxic Effects of Manganism and Parkinson's Disease
73 PN	Cayemitte, Laurent; Saqib, Mahnoor; Carroll, Margaret A.; Catapane, Edward J.	6-Hydroxydopamine Treatment Causes Supersensitivity of Dopamine D2R Receptors in Gill Lateral Cells of Crassostrea virginica
74 PN	Celey-Okogun, Osemenga; Wang, Ping	Ovarian Tissue Cryopreservation and Transplantation into Brown Adipose
75 PN	Myrbel, Nedjee; Obianke, Victory; Carroll, Margaret A., Catapane, Edward J.	A Neurophysiology Role of Glutamate in Ganglia of the Bivalve Crassostrea virginica

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76 PN	Wallach, Rosanne; Pierre, Kandy; Foster, Tia; Catapane, Edward J., Carroll, Margaret A.	Presence of Glutamate Neurons and Glutamate Receptors in Ganglia of the Bivalve Crassostrea virginica
77 PN	Small, Shatema; Wilson, Bellavia; Joseph, Kinida; Carroll, Margaret A.; Catapane, Edward J.	Comparison of the Neurotoxic Actions of 6- Hydroxydopamine and Manganese on Gill Lateral Cell Dopamine D2R Receptors of Crassostrea virginica
78 PN	Miura Traficante, Saheed Lawal, Sung-Hoon Kim, Matthew Dickinson, Keith Yeung, Andrew Gallagher, Olivia Tabeka, Lauren Senia, Prerana Shrestha	Investigating Dysregulated Emotional Behaviors in Tuberous Sclerosis Complex with Behavior Battery and Calcium Photometry
79 PN	Ethan Valle; Mohamed Noor; Emma Sarinick; Michael Coyle; Christopher Bishop	The effects of the serotonin drugs Vortioxetine and Vilazodone on Apomorphine-induced dyskinesia in a rat model of Parkinson's disease
80 PN	Tamayo, Sara; Shikapwashya, Gabriella	Potential Role of LRRC8 in Supplying Cysteine to Neurons Via GSH Release
81 PN	Bozor, Katoucha; Austin, Mark	Volume Regulated Anion Channels Are Essential for GSH Release in Astrocytes
82 BB	Ronelle Robinson, Rochaiu Daye and Abu Gafar Hossion*	Virtual Screening of Novel Benzimidazole Sugar Analogue with Microtubule Protein as Potent Chemotherapeutic Candidate

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