



Brooklyn College Cancer Center

Issue 4 | Summer 2024

Dear Members of the BCCC-CURE Community,

Welcome to the fourth edition of our Brooklyn College Cancer Center (BCCC-CURE) newsletter. In this issue, we update you on the activities and accomplishments of our BCCC-CURE faculty, staff, and student members since January 2024. We are excited to report on the accomplishments and innovative new projects of our researchers, students, educators, community outreach workers, along with our partners. We would also like to express our thanks to the American Cancer Society, the Gray Foundation, and our donors, partners, and friends for the continued support of the BCCC-CURE.

We hope you enjoy reading this issue of the BCCC-CURE Newsletter. If you have any feedback or comments to make please do not hesitate to contact our team at: BCCC-CURE@brooklyn.cuny.edu

SPRING 2024 HIGHLIGHTS

With generous support of the American Cancer Society, through Diversity in Cancer Research Institutional Development Grant Program (DICR IDG), the BCCC-CURE has been able to expand our scale and scope of our funding support to students, principle investigators, and a clinician scientist!

ACS - BCCC-CURE CLINICIAN SCIENTIST DEVELOPMENT GRANT



Florence Lui, Assistant Attending Psychologist at Memorial Sloan Kettering Cancer Center; Assistant Professor, Weill Cornell Medicine, Department of Psychiatry

Cultural Adaptation of a Multicomponent Counseling Program for Chinese Cancer Survivors: A Pilot Optimization Trial (CAMCO)

The lack of evidence-based, culturally and linguistically appropriate psychosocial interventions for limited English proficient (LEP) Chinese Americans (CAs) with cancer is a health disparity that requires redress. We propose to leverage our preliminary data to adapt and culturally tailor 3 components—(1) meaning-centered counseling; (2) cancer education; and (3) peer support—as part of the proposed Multicomponent Support Program for Chinese Cancer Survivors (MCP-CCS) and to pilot them in an optimization trial. Conducting this study will contribute to the PI's development into an independent investigator with expertise in cancer survivorship; mixed methods design and analysis; MOST and factorial designs; and community-engaged research; and will deepen skills in project management, and scientific leadership.

ACS DICRIDG PILOT GRANTS

Murat Alper Cevher, Assistant Professor, Biology Department

Characterizing Cell-Specific Interaction of Oncogenic Activator RUNX1 with Transcriptional Coactivator Mediator in Colon Cancer



Activator proteins control cellular processes. Uncontrolled activator proteins result in malfunctions in cellular processes, which lead to cancer. Thus, being able to specifically regulate the uncontrolled activators to normalize abnormal cellular processes is the holy grail of biology. In that sense, governing over the Mediator is the key approach as the Mediator is the only multi-protein complex that can selectively control most if not all the activators. The Mediator does this function through its different subunits by directly interacting with the activators and regulating their downstream effects for proper cellular processes. Recently, I discovered the highly oncogenic activator RUNX1/CBF β to co-precipitate with the Mediator in colorectal cancer cells. This activator protein is known to play important roles in the tumorigenesis of colorectal cancer cells. In this pilot grant, through a battery of biochemical assays, I will mechanistically dissect in to understanding how this oncogenic activator protein interacts with the 30-subunit human Mediator complex in colorectal cancer cells as well as in cell-free system using purified proteins. The results gained from this pilot grant will allow us to develop parent grants where we will also architecturally characterize the interaction surface and further screen for existing mutations on the Mediator-RUNX1/CBF β interface in human cancer patients. We will also design specific inhibitors that will disrupt this interaction and understand the biological significance in tumorigenesis. The inhibitors will have the potential to serve as therapeutics.



Ankit Jain, Assistant Professor, Chemistry and Biochemistry

Developing Structured Condensates for Potential Anti-Cancer Drug Delivery

The project aims to develop a novel anti-cancer drug delivery platform comprised of structured condensates. Recently, the PI reported the stabilization hydrophobic domains inside liquid condensates. Following proposal thus envisages development of these structured condensates in to stabilized and surface functionalized nano/micro particles capable of hosting hydrophobic drugs. The hydrophobic drug to be tested is Capecitabine with breast cancer as the target. Capecitabine tablets are FDA approved for breast cancer as Xeloda[®] (2023 global market of US\$ 1 billion). This is given to late-stage patients resistant to anthracycline or taxanes. Capecitabine has low plasma half- life owing to a facile conversion to its active form Fluorouracil. This results in multiple doses, leading to significant side effects. The proposed localized structures would not only enhance the partition coefficients of prospective anti-cancer drug molecules but will also be capable of stimuli sensitive, sustainable and multifarious action. Thus, capecitabine (and drugs with similar pharmacokinetic profiles) are an ideal candidate for the proposed drug delivery system which offers a higher loading but a much more sustained release, overcoming the chemotherapeutic challenges. This would be a steppingstone to the next generation of cancer therapeutic platforms that are eventually adaptable to local metabolic demands.

ACS-BCCC-CURE SUMMER INTERNSHIPS FOR UNDERGRADUATE UNDERREPRESENTED STUDENTS

We congratulate our first cohort of ACS-BCCC-CURE Summer Interns. This program funds hands-on research for student populations who are underrepresented in the cancer workforce. We are pleased to congratulate our six Internship awardees, who in addition to receiving a stipend to support an 8-week-long summer research experience, will also receive tailored capacity building and career readiness training and mentorship over the course of the summer.

Rukayat Agbona will complete research under the mentorship of Dr. Anjana Saxena, Biology Department. This research is titled “Regulation of Nucleolin Phosphorylation by PP1 β during Cell Cycle”

Janette Arellano will complete research under the mentorship of Dr. Guillermo Gerona-Navarro, Chemistry and Biochemistry Department. This research is titled “Synthesis and Biological Evaluation of Staple Peptides Targeting PRC2 Complex Function”

Yassir Azzam will complete research under the mentorship of Dr. Murat Cevher, Biology Department. This research is titled “Learning how to utilize the multibac baculovirus expression system and generate recombinant Mediator subunit(s)”

Nitu Farhin will complete research under the mentorship of Dr. Shaneen Singh, Biology Department. This research is titled “Breast cancer bioinformatics: Role of the BRCT-region in dysregulated DNA repair with a focus on nucleolin and BRCA1”

Sophia Keadze will complete research under the mentorship of Dr. Maria Contel, Chemistry and Biochemistry Department. This research is titled “Exploration of histone modifications in triple negative breast cancer cells by a Ruthenium anticancer agent”

Rebecca Turay will complete research under the mentorship of Dr. Maria Contel, Chemistry and Biochemistry Department. This research is titled “Platinum(IV)-Au(I) Compounds Containing the Carboplatin Core as Potential Ovarian Cancer Chemotherapeutics”



(L to R) Rebecca Turay, Sophia Keadze, Yassir Azzam, Nitu Farhin, & Rukayat Agbona
(not pictured: Janette Arellano.jpg)

Through the generous support of the Gray Foundation Operations Support Grant, the BCCC-CURE has been able to fund seed grants, internships, travel grants, and mentoring fellowships.

GRAY FOUNDATION-BCCC-CURE SEED BRCA-RELATED CANCERS RESEARCH GRANTS



Maria Contel, Professor, Chemistry and Biochemistry Department

Study of the Activity of a Ruthenium-Based Anticancer Agent and its Optimized Targeted Formulations in BRCA1-Defective Triple Negative Breast Cancer

This proposal aims to ascertain the anticancer effects of a water-soluble and cost-effective Ru-based organometallic compound, and its targeted formulations in triple negative breast cancer (TNBC) BRCA1 defective cell lines. This compound has demonstrated high efficacy in TNBC in vitro and in vivo (mice) with preferential accumulation in tumor and little systemic toxicity. This compound exerts its effects through inhibition of the PI3K/AKT/mTOR pathway (much unlike other chemotherapeutics such as cisplatin). TNBC affects disproportionately women of African and Indigenous descent in the US, including women in Brooklyn. The topic is relevant to one of the mission goals from the Gray Foundation: “accelerate research, raise awareness, and improve treatment to support individuals and families who have inherited BRCA mutations and related cancers”. The work will be carried out by me (principal investigator) along with some researchers in my group, including two undergraduate students (both from financially-disadvantaged households). The students will be learning cell culture techniques and biological assays, as well as synthesis of organometallic compounds and liposomal formulations (including engraftment with monoclonal antibodies). Most of the work will be performed at Brooklyn College but when needed, we will utilize instrumentation at the ASRC CUNY (to characterize liposomes) and facilities from Memorial Sloan Kettering Cancer Center MSKCC (to obtain and engraft liposomes with a monoclonal antibody). The proposal therefore matches the second goal of the Gray Foundation: “expand access to education, healthcare and opportunity to improve the options and outcomes for New York City youth from low-income backgrounds” Moreover, this proposal is relevant to the mission of BCCC-CURE to “expand fundamental (basic and applied) research on cancer and combine research forces with local (New York City) cancer treatment centers and hospitals, and Brooklyn communities, while delivering first-class educational opportunities to our undergraduate and graduate students”.

Aneta Mieszawska, Associate Professor, Chemistry and Biochemistry Department

A Nanoparticle-Based Approach for Hereditary BRCA-Mutated Ovarian Cancer (OvCA)

The tumor suppressor protein BRCA1 is often mutated in patients developing aggressive triple negative breast cancer (TNBC). The loss of tumor suppressor BRCA1 results in profound chromosomal instability. BRCA1 with its obligate molecular partner BARD1, facilitates an E3 ubiquitin (Ub) ligase activity that is essential for DNA double strand breaks (DSB), transcriptional and cell cycle regulation. The domain requiring for BRCA1 Ub-ligase activity when mutated, is implicated in developing chemotherapy-resistance. Nucleolin (NCL), the stress-responsive RNA-binding protein (RBP), collaborates with BRCA1 at the sites of DSB to constitute complex cellular DNA damage response (DDR). In this seed proposal, we focus on how BRCA1-mediated regulation of NCL- mRNA interactions and hence the cellular transcriptome, have functional implications in stress conditions and cancer. We will investigate how the depletion of NCL or its target mRNA such as anti-apoptotic gene BCL2 negatively impact cell viability in



different breast cancer and TNBC cell types. The study revelations will offer new approaches to target BRCA1- mediated ubiquitination pathway and to control gene regulation by RBP, to improve breast cancer outcomes and therapies.



Sheena Philogene, Assistant Professor, Library

Extended Analysis of Breast and Ovarian Cancer Incidence Trends in Brooklyn NY: A Geospatial Approach

This project seeks to extend and expand on the work completed during 2023 through there has been substantial progress in the results produced and a progression of the scale and scope of the project, based on insights gained through early results. In keeping with the mission of the Gray Foundation and BCCC-CURE, phase one of this project focused on analyzing breast and ovarian cancer incidence data for women in Brooklyn, to better understand the impact of these diseases on the community at the local level and determine if there are geographic, age, or other demographic factors that influenced outcomes over the last 20 years. This current iteration seeks to continue building upon this, with an ultimate goal of seeing the most functional components of this work completed and disseminated. While the current findings provide a meaningful evidence-based foundation for further investigation, the proposed next steps will be pivotal in generating actionable results, which can be used to advise practitioners and community advocates about which neighborhoods and populations may have the most urgent need for increased access to or knowledge of screening and care resources. This data can also help inform interventions and programming offered by BCCC-CURE for the Brooklyn College and broader Brooklyn communities and shared with collaborators in other disciplines and institutions, who can add further depth and value to the outcomes.

Shaneen Singh, Associate Professor, Biology Department

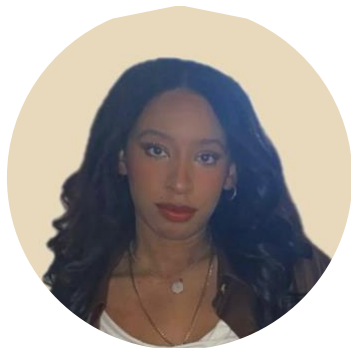
Deciphering the Molecular Mechanisms of RNA Binding Proteins (RBPs) Mediated Regulation in Breast Cancer: *In Silico* focus on the Common RBP Interactors of Nucleolin and BRCA1

Here, we detail a comprehensive computational approach to understand the molecular mechanisms underlying the intertwined signaling of the NCL and the selected RBPs in breast cancer. We hypothesize that NCL regulates and intersects the pathways of common target RNAs as HNRNPA1, HNRNPD, PABPC1, and TDP-43 known to play a role in BRCA1 mediated breast cancer. This proposal aims to characterize the molecular mechanisms of NCL and the selected RBPs' interactions with target RNAs implicated in breast cancer and tease out the how the RBPs cooperate or compete to regulate the signaling. This proposal consists of the following specific aims: 1) Model and characterize the full length structures of RBDs of HNRNPA1, HNRNPD, PABPC1, and TDP-43; 2) Identify RNA targets and binding motifs for in both the RBPs and target RNAs. 3) Model the interaction of the RNA molecules with NCL, HNRNPA1, HNRNPD, PABPC1, and TDP-43. Although promising, targeting RBPs in breast cancer remains a challenge and there is a need to develop innovative targeting methods that offer routes for effective RBP targeted clinical intervention. The results from this study will lay the groundwork in identifying details of key interaction interfaces of RBP-target RNA complexes that drive the complex regulatory networks of BRCA1 mediated breast cancer and could serve as sites for intervention.



GRAY FOUNDATION – BCCC-CURE SUMMER DOCTORAL STUDENTS RESEARCH MENTORSHIP INITIATIVE

The BCCC-CURE (via the Gray Foundation) has created an initiative to support doctoral-student led undergraduate summer opportunities in different areas of research, with one undergraduate researcher mentored by one doctoral student. Through this tiered mentorship structure, the mentoring initiative prepares undergraduates to conduct independent research in a collaborative environment, while training the Doctoral Researchers to become successful mentors.



Raven Fisher

CUNY Biochemistry PhD Program;
BC Chemistry and Biochemistry
Department



Hanjun Jeon

CUNY Biology PhD Program;
BC Biology Department

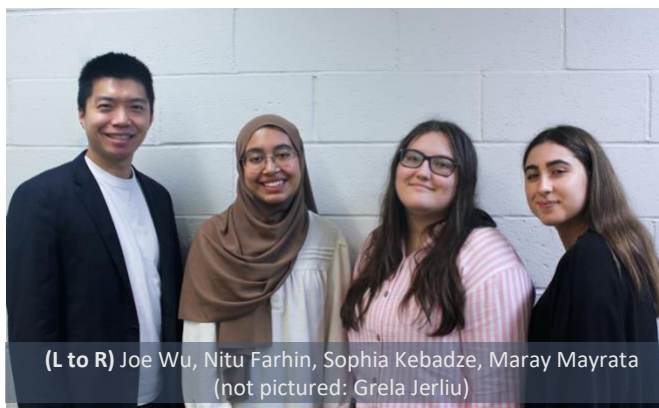


Katherine Menendez Borbolla

CUNY Biochemistry PhD Program;
BC Chemistry and Biochemistry
Department

GRAY FOUNDATION – BCCC-CURE TRAVEL AWARDS

We congratulate the four recipients of the Gray Foundation-BCCC-CURE Travel Grant funds to support conference attendance and research presentations in New Hampshire, Maine, and Canada.



Through these grants, students were able to attend and present at the:

- Computational Chemistry Gordon Research Seminar and Conference 2024, Portland, Maine (**Joe Wu**)
- Metals in Medicine Gordon Research Conference 2024 in Andover, New Hampshire (**Maray Mayrata & Sophia Keadze**)
- The 38th Annual Symposium of the Protein Society 2024 in Vancouver, Canada (**Nitu Farihin & Grela Jerliu**)

GRAY FOUNDATION – BCCC-CURE SUMMER RESEARCH INTERNSHIP UNDERGRADUATE STUDENT PROGRAM

We are pleased to congratulate our five Summer 2024 Undergraduate Research Internship awardees, who each receive a stipend supported by the Gray Foundation to participated in 8-weeks of state-of-the-art cancer research and professional development activities with a BCCC-CURE member at Brooklyn College.

Maray Mayrata, will complete research in the Contel Lab titled “Isolation of a Degradation Product from a Ruthenium-Based Anticancer Agent”

Anastasia Kutuzov, will complete research in the Saxena Lab titled “Targeting NCL to assess cell viability in triple-negative breast cancer cells”

Daniel Sarafzadeh, will complete research in the Schvarzstein Lab titled “Comparing Development Timing of Isgenic Diploid and Tetraploid Animals”



Emily Didia, will complete research in the Gerona-Navarro Lab titled “Synthesis and Biological Evaluation of Peptide-Driven Allosteric Inhibitors of H3K36 Trimethylation”

Grela Jerliu, will complete research in the Singh Lab titled “Deciphering the Intermolecular Networks of Nucleolin and Poly (ADP-ribose) polymerase 1 in Breast Cancer”

GRAY FOUNDATION- BCCC-CURE SUMMER RESEARCH INTERNSHIP HIGH-SCHOOL STUDENT PROGRAM

We are excited to announce our 2024 High School Students Research Internship cohort of high school students performing research in the laboratories of BCCC-CURE Members for Spring/Summer of 2024. This program provides a funded opportunity for three 11th and 12th grade students in public High Schools in NYC to get involved in cancer-related research with a BCCC-CURE principal investigators.

Jacqueline Huang will complete research in the Saxena Lab titled “Fusobacterium as a Prognostic Biomarker of Cancer”

Sukhadeep Kaur will complete research in the Singh Lab titled “Role of CUL2 as a Common Interactor of BRCA1 and NCL in Breast Cancer”

Sophie McCarrick will complete research in the Contel Lab titled “Degradation Studies of a Ruthenium-Based Anticancer Agent”

Through partnership with local medical, educational, and research institutions, we can connect Brooklyn College students with a multitude of unique learning, research, training opportunities.

MEMORIAL
SLOAN
KETTERING
CLINICAL
ONCOLOGY
OPEN LEARNING
(COOL)
PROGRAM

Memorial Sloan Kettering (MSK) Cancer Center's COOL is a six-week summer internship designed to encourage undergraduate students to consider careers as cancer physicians. Students will be exposed to clinical learning, participation in multidisciplinary conferences, and 1-on-1 teaching with MSK physicians and staff.

We congratulate **Ashmey Dumervil** and **Malcom Reid**, who were selected as part of the Memorial Sloan Kettering Clinical Oncology Open Learning (COOL) Program.



BCCC-CURE has partnered with the Maimonides Cancer Center College Student Summer Internship Program, a summer immersive shadowing program for college students to experience the full multidisciplinary spectrum of colorectal cancer care at the Maimonides Cancer Center.

MAIMONIDES
CANCER CENTER
COLLEGE
STUDENT
SUMMER
INTERNSHIP
PROGRAM

We congratulate **Gresha Ellington, Stephanie Kumaratung, Abigail Toledo, and David Aini**, who were selected as part of the Maimonides Cancer Center College Student Summer Internship Program.



WEILL CORNELL
IMPACT
PROGRAM: DATA
COLLECTION
TEAM

The IMPACT: Community Health Education program aims to deliver Community Based-education workshops to community residents in Brooklyn to raise awareness about women's health and clinical trials. To accomplish this goal, we are conducting a one-time health education workshop teaching individuals how they can become a FORCE of change in their communities.

Congratulations **Vachi Ly, Phoebe Marbid, Malak Abdelrasoul, Vivek Suri, and Vivek Suri**, who were selected as part of the IMPACT Program, Health Data Collector Team.

MOUNT SINAI
TISCH CANCER
CENTER
LAY HEALTH
NAVIGATORS

Through partnership with the Tisch Cancer Institute Community Outreach and Engagement Program at Mount Sinai, the BCCC-CURE offers the Mount Sinai Tisch Cancer Center Lay Health Navigator Program at Brooklyn College. Lay Health Navigators reach out to community members to improve access to cancer screenings and care, especially among underserved communities across NYC.

From our spring cohort, we congratulate **Yanexis Acosta** and **Chana Lipshutz**, who trained as Lung Cancer Navigators, and **Kerry-Anne Hamilton, Jingyin He, Bintou Sawaneh, Naaz Deep, Amna Zamir, and Rabia Asif**, who trained as Breast Cancer Navigators.



Congratulations to our BCCC-CURE PIs who were awarded new federal grants in 2024, to support their research!

FEDERAL GRANTS

American Cancer Society

Principal Investigator: Maria Contel

Department: Chemistry

Title: BCCC-CURE Summer Internships for Undergraduate Underrepresented Students

Dates: 1/2024 - 12/2026

Award Amount: \$121,000

National Institutes of Health

Principal Investigator: Murat Cevher

Department: Biology

Title: Defining the Components of Olfactory Singular Expression

Dates: 2/2024 - 1/2025

Award Amount: \$50,000

National Science Foundation

Principal Investigator: Ankit Jain

Department: Chemistry

Title: I-Corps: Translation Potential of Peptidic Ensembles as Novel Bio-adhesives

Dates: 3/2024 - End: 2/2025

Award Amount: \$50,000

Our researchers have published 25 cancer and health related articles, books, and book chapters through the first six months of 2024 and were granted a US patent.

Ahad, A., Aftab, F., Michel, A., Lewis, J. S., & **Contel, M.** (2024). Development of Immunoliposomes Containing Cytotoxic Gold Payloads Against HER2-Positive Breast Cancers. *RSC Medicinal Chemistry*, 15(1), 139-150. <https://doi.org/10.1039/d3md00334e>

Anderson, C. R., Curtsdotter, A. R. K., **Staniczenko, P. P. A.**, Valdovinos, F. S., & Brosi, B. J. (2024). The Interplay of Binary and Quantitative Structure on the Stability of Mutualistic Networks. *Integrative and Comparative Biology*, icae074. <https://doi.org/10.1093/icb/icae074>

Barriales, K., Khandaker, S., **Jain, A.**, Sementa, D., Nair, M. N., Wang, T., Tang, J., DelRe, C., & Ulijn, R. V. (2024). Aqueous Graphene Dispersion and Biofunctionalization via Enzymatic Oxidation of Tripeptides. *Small*, 2400775. <https://doi.org/10.1002/smll.202400775>

Baucom, J. C., Agyemang, N. B., Trelles, T., **Gallicchio, E.**, & **Murelli, R. P.** (2024). Studies on the Configurational Stability of Tropolone-Ketone-, Ester-, and Aldehyde-Based Chiral Axes. *The Journal of Organic Chemistry*, 89(1), 541-552. <https://doi.org/10.1021/acs.joc.3c02286>

Chen, L., Wu, Y., Wu, C., Silveira, A., Sherman, W., Xu, H., & **Gallicchio, E.** (2024). Performance and Analysis of the Alchemical Transfer Method for Binding-Free-Energy Predictions of Diverse Ligands. *Journal of Chemical Information and Modeling*, 64(1), 250-264. <https://doi.org/10.1021/acs.jcim.3c01705>

Cheung, M. M., Hubert, P. A., Reed, D. R., **Pouget, E. R.**, **Jiang, X.**, & Hwang, L. D. (2024). Understanding the Determinants of Sweet Taste Liking in the African and East Asian Ancestry Groups in the U.S.-A Study Protocol. *PLoS One*, 19(4), e0300071. <https://doi.org/10.1371/journal.pone.0300071>

- Dang, Q., Zhu, Y., Zhang, Y., Hu, Z., Wei, Y., Chen, Z., **Jiang, X.**, Cai, X., & Yu, H. (2024). Nuclear Binding Protein 2/Nesfatin-1 Affects Trophoblast Cell Fusion during Placental Development via the EGFR-PLCG1-CAMK4 Pathway. *International Journal of Molecular Sciences*, 25(3), 1925. <https://doi.org/10.3390/ijms25031925>
- Eastman, P., Galvelis, R., Peláez, R. P., Abreu, C. R. A., Farr, S. E., **Galicchio, E.**, Gorenko, A., Henry, M. M., Hu, F., Huang, J., ... **Singh, S.**, ... Markland, T. E. (2024). OpenMM 8: Molecular Dynamics Simulation with Machine Learning Potentials. *The Journal of Physical Chemistry. B*, 128(1), 109–116. <https://doi.org/10.1021/acs.jpcc.3c06662>
- Ihalagedara, H. B., Xu, Q., **Greer, A.**, & Lyons, A. M. (2024). Singlet Oxygen Generation on a Superhydrophobic Surface: Effect Of Photosensitizer Coating and Incident Wavelength on $^1\text{O}_2$ Yields. *Photochemistry and Photobiology*, <https://doi.org/10.1111/php.13969>
- Kadam, I., Dalloul, M., Hausser, J., Vaday, D., Gilboa, E., Wang, L., Hittelman, J., Hoepner, L., Fordjour, L., Chitamanni, P., **Saxena, A.**, & **Jiang, X.** (2024). Role of one-carbon nutrient intake and diabetes during pregnancy in children's growth and neurodevelopment: A 2-year follow-up study of a prospective cohort. *Clinical Nutrition*, 43(6), 1216–1223. <https://doi.org/10.1016/j.clnu.2024.04.011>
- Kadam, I., Nebie, C., Dalloul, M., Hittelman, J., Fordjour, L., Hoepner, L., Futterman, I. D., Minkoff, H., & **Jiang, X.** (2024). Maternal Lutein Intake during Pregnancies with or without Gestational Diabetes Mellitus and Cognitive Development of Children at 2 Years of Age: A Prospective Observational Study. *Nutrients*, 16(2), 328. <https://doi.org/10.3390/nu16020328>
- Kadam, I., Trasino, S. E., Korsmo, H., Lucas, J., Pinkas, M., & **Jiang, X.** (2024). Prenatal Choline Supplementation Improves Glucose Tolerance and Reduces Liver Fat Accumulation in Mouse Offspring Exposed to Ethanol during the Prenatal and Postnatal Periods. *Nutrients*, 16(9), 1264. <https://doi.org/10.3390/nu16091264>
- Khuttan, S., & **Galicchio, E.** (2024). What to Make of Zero: Resolving the Statistical Noise from Conformational Reorganization in Alchemical Binding Free Energy Estimates with Metadynamics Sampling. *Journal of Chemical Theory and Computation*, 20(3), 1489–1501. <https://doi.org/10.1021/acs.jctc.3c01250>
- Kletenik, D.**, & Adler, R. F. (2024). Motivated by Inclusion: Understanding Students' Empathy and Motivation to Design Accessibly Across a Spectrum of Disabilities. In *Proceedings of the 55th ACM Technical Symposium on Computer Science Education V. 1* (pp. 680–686). <https://doi.org/10.1145/3626252.3630894>
- Kletenik, D.**, Minkowitz, R., Peric, A., Sahin, M., & Adler, R. F. (2024). From Awareness to Action: Teaching Software Accessibility for Neurodiverse Users. In *Proceedings of the 55th ACM Technical Symposium on Computer Science Education V. 1* (pp. 687–693). <https://doi.org/10.1145/3626252.3630859>
- Leng, J., **Lui, F.**, Narang, B., Cabral, J., Finik, J., Wu, M., Tonda, J., & Gany, F. (2024). An Innovative Approach to Promote Weight Loss Among Mexican Immigrants: A Pilot Study. *Journal of Immigrant and Minority Health*, 26(3), 492–500. <https://doi.org/10.1007/s10903-023-01562-6>
- Obeid, R., Schön, C., Derbyshire, E., **Jiang, X.**, Mellott, T. J., Blusztajn, J. K., & Zeisel, S. H. (2024). A Narrative Review on Maternal Choline Intake and Liver Function of the Fetus and the Infant; Implications for Research, Policy, and Practice. *Nutrients*, 16(2), 260. <https://doi.org/10.3390/nu16020260>
- Otero-González, J., Querini-Sanguillén, W., Torres-Mendoza, D., Yevdayev, I., Yunayev, S., Nahar, K., Yoo, B., **Greer, A.**, Fuentealba, D., & Robinson-Duggon, J. (2024). On the mechanism of visible-light sensitized photosulfoxidation of toluidine blue O. *Photochemistry and Photobiology*, 100(3), 772–781. <https://doi.org/10.1111/php.13882>

Nayeem, N., Sauma, S., Ahad, A., Rameau, R., Keadze, S., Bazett, M., Park, B. J., Casaccia, P., Prabha, S., Hubbard, K., & **Contel, M.** (2024). Insights into Mechanisms and Promising Triple Negative Breast Cancer Therapeutic Potential for a Water-Soluble Ruthenium Compound. *ACS Pharmacology & Translational Science*, 7(5), 1364–1376. <https://doi.org/10.1021/acscptsci.4c00020>

Paracha, N., Mastrokostas, P., Kello, E., Gedailovich, Y., Segall, D., Rizzo, A., Mitelberg, L., Hassan, N., & **Dowd, T. L.** (2024). Osteocalcin improves Glucose Tolerance, Insulin Sensitivity and Secretion in Older Male Mice. *Bone*, 182, 117048. <https://doi.org/10.1016/j.bone.2024.117048>

Pouget, E. R., Feyissa, G. T., & Wong, T. (2024). Inequity in US Racial/Ethnic Infant Health and Birth Outcomes: The Role of the Adult Sex Ratio as a Potential Indicator of Structural Anti-Black Racism. *Journal of Racial and Ethnic Health Disparities*. <https://doi.org/10.1007/s40615-024-01984-4>

Power, K. M., Nguyen, K. C., Silva, A., **Singh, S.**, Hall, D. H., Rongo, C., & Barr, M. M. (2024). NEKL-4 Regulates Microtubule Stability and Mitochondrial Health in Ciliated Neurons. *The Journal of Cell Biology*, 223(9), e202402006. <https://doi.org/10.1083/jcb.202402006>

Sabanés Zariquiey, F., Galvelis, R., **Gallicchio, E.**, Chodera, J. D., Markland, T. E., & De Fabritiis, G. (2024). Enhancing Protein-Ligand Binding Affinity Predictions Using Neural Network Potentials. *Journal of Chemical Information and Modeling*, 64(5), 1481–1485. <https://doi.org/10.1021/acs.jcim.3c02031>

Yigiter, F., Niwa, E. Y., Shane, J., & **Reigada, L.** (2024). *Conducting A Multisite Online Study Examining Undergraduates' Experiences During the COVID-19 Pandemic*. SAGE Publications Ltd. [Book]. <https://doi.org/10.4135/9781529683158>

Zhao, X., Cai, X., Zhu, H., Dang, Q., Yang, Q., Zhu, Y., Zhang, Y., Zhang, M., **Jiang, X.**, Hu, Z., Wei, Y., Xiao, R., & Yu, H. (2024). 27-Hydroxycholesterol inhibits trophoblast fusion during placenta development by activating PI3K/AKT/mTOR signaling pathway. *Archives of Toxicology*, 98(3), 849–863. <https://doi.org/10.1007/s00204-023-03664-4>

SPRING 2024 EVENT SPOTLIGHT

BCCC-CURE Spring 2024 Scientific Seminars and Symposia

Wednesday, January 31, 2:30 – 4:30PM PhD Student Javier Lopez-Hernandez Doctoral Dissertation Defense. “Development of Platinum(IV) – Gold(I) – Based Anticancer Agents” Hosted by Prof. [Maria Contel](#). This was a hybrid event: BC Library Room # 411 & via zoom.

Thursday, February 8, 12:30 – 1:30PM Joint BCCC-CURE and Biology Scientific Seminar by [Dr. Saurabh Agarwal](#) (Assistant Professor and St. Baldrick’s Scholar, Department of Pharmaceutical Sciences, College of Pharmacy and Health Sciences, St. John’s University, New York) “Deciphering the Epigenetic Mechanisms in Neuroblastoma Cancer Stem Cells: A Targeted Therapeutic Approach”. Hosted by Prof. [Shaneen Singh](#). Room #113 New Ingersoll.

Thursday, February 29, 12:30 – 1:30PM Joint Scientific Seminar BCCC-CURE, Health and Nutrition Sciences, Sociology, PRLS, and Women’s Center by [Ms. Mia Keelys](#), (Federal Affairs Director of Hologic). “Artificial Intelligence in Healthcare, Policy, & Equity: A Revolution or Regression?” Hosted by Prof. [Maria Contel](#). BC Library, Woody Tanger Auditorium. A Light lunch will be provided from **1:30 – 2:15PM** at BC Library #411.

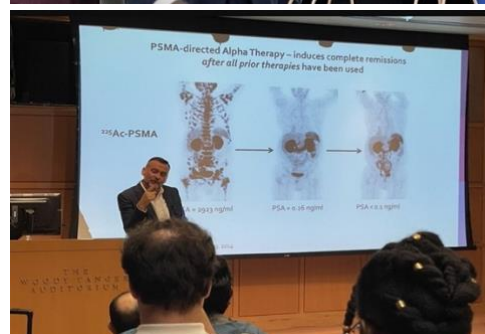
Friday, March 8, 12:30 – 1:30PM Joint BCCC-CURE and Chemistry Scientific Seminar by [Dr. Rein Ulijn](#) (Director of Nanoscience Initiative at the Advanced Science Research Center) “Peptide-Based Supramolecular Systems Integrated with Biology.” Hosted by Prof. [Ankit Jain](#). This was a hybrid event: Room # 3143 Ingersoll & via Zoom

Friday, March 15, 9AM – 1PM Training: “Funding Opportunities for Brooklyn College Principal Investigators & Researchers: A Workshop on IP Creation and Tech Transfer”. Organized by BCCC-CURE in collaboration with different CUNY Innovation and Entrepreneurship Offices & Programs (ASRC-CAT, CUNY Technology & Commercialization Office, iCorps Program). Coordinators: Tavis Ezell and Yuki Chen (ASRC-CAT) and Prof. [Maria Contel](#). (BCCC-CURE). Lecture Hall # 148 New Ingersoll.

Thursday, May 2, 12:15 – 1:15PM Friedman Lecture Chemistry Department (co-sponsored by BCCC-CURE) by [Dr. Jason Lewis](#) (BCCC-CURE Advisory Board member; Emily Tow Chair in Oncology; Vice Chair for Research, Department of Radiology; Chief, Radiochemistry and Imaging Sciences Service; Director of the Radiochemistry and Molecular Imaging Probe Core Facility, Memorial Sloan Kettering Cancer Center). “Visualizing and Treating Cancer with Radiopharmaceuticals.” Hosted by Prof. [Ryan Murelli](#). BC Library, Woody Tanger Auditorium.

Friday, May 10, 12:30 – 1:30PM Joint BCCC-CURE and Chemistry Scientific Seminar by [Dr. William Chain](#) (Associate Professor, University of Delaware). “Synthesis of Anti-Cancer Terpenoid Natural Products.” Hosted by Prof. [Maria Contel](#). This was a hybrid event: Room # 3143 Ingersoll & via Zoom.

May 29, 30, 31, and June 3, 4, and 5 (9AM – 1:30PM) Joint BCCC-CURE and Chemistry & Biochemistry Department Training: “Theory and Practice NMR Course.” 1D, 2D, Multinuclear and VT NMR Experiments. Practice Sessions using the Department 400 MHz Bruker NMR. Oriented to Synthetic Chemists. Hosted by Dr. Esteban Urriolabeitia (Senior Researcher, National Council of Scientific Research/University of Zaragoza, Spain).



Community Outreach Events

Tuesday, February 15, 12:30PM – 1:30PM Education Information Session. “Health and Biomedical Summer Opportunities at BCCC-CURE and Maimonides Health” at BC Library Room 411 **meet and greet lunch 1:30PM-2:00PM**. Hosted by: Prof. [Jennifer Basil](#) and Ms. Ana Bartolomé.

Thursday, April 11, 12:30PM – 2:30PM Brooklyn College Staff Cancer Prevention Information Session and Luncheon, Student Center, Bedford and Amersfort rooms (2nd floor). **Free Prostate Cancer Blood Test** will be available, 9-4 PM. Screening Mobile Van will be parked on Bedford Avenue and Campus Road. **Free Breast Cancer Screenings** every Monday! at 2236 Nostrand Ave, Brooklyn, NY 11210, New York Cancer and Blood Specialists.

Tuesday, May 7, 12:30PM – 2:30PM BC Health and Wellness Fair: Take Action! Take Care! At the BC East Quad. Co-hosted by BCCC-CURE and BC Office of Health and Wellness.



MEMBER HIGHLIGHTS

BCCC-CURE CLINICIAN SCIENTIST



Florence Lui, Ph.D

Assistant Attending Psychologist at Memorial Sloan Kettering Cancer Center; Assistant Professor, Weill Cornell Medicine, Department of Psychiatry

In 2-3 sentences can you describe your cancer research topic?

I work at the intersection of psycho-oncology (i.e., the psychological, social, and behavioral aspects of the cancer experience) and health disparities (i.e., preventable differences in health and disease experienced by socially disadvantaged groups). My research involves developing and adapting existing psychosocial interventions to make them accessible and culturally appropriate for underserved ethnoracial minority groups. I am especially interested in increasing access to mental health care for cancer patients and survivors with limited English proficiency.

When and where did you start doing cancer research?

I started doing cancer research as a doctoral student in clinical psychology at City College New York, when I began working with researchers in the Immigrant Health & Cancer Disparities Service at Memorial Sloan Kettering Cancer Center as part of my predoctoral research fellowship through the CCNY-MSK Partnership Cancer Research, Education, and Community Outreach.

Briefly, what are the most rewarding and most challenging components of your cancer research career?

The most rewarding moments are when I can see that something I have worked on has made a tangible difference to a patient. For example, witnessing a patient's mental health improve after receiving therapy in their language, or seeing a patient's treatment adherence improve once their essential needs have been met. The most challenging are probably project management related, such as navigating the bureaucratic requirements of research (e.g., budgets, reports, legal agreements, etc.), and of course, sustaining grant funding for my research!

Do you collaborate with external institutions?

Yes, I am here as part of a collaboration between MSK and Brooklyn College and have collaborated with folks from other institutions as well, including CCNY, Maimonides, New York Presbyterian/Weill Cornell Medical Center – Lower Manhattan Hospital, and Queens Cancer Center.

What do you do for fun in your free time?

I love to read and to spend time with friends and family, especially my two daughters, who are 2 and 4 years old.

**Diana Martinez Baquero, Ph.D**

Postdoctoral Associate, Chemistry Program, Brooklyn College and The Graduate Center, The City University of New York

In 2-3 sentences can you describe your cancer research topic?

My research interests focus on bioactive peptides for treating various types of cancer. Currently, in Prof. Gerona-Navarro's lab, we are concentrating on stapled and alpha-helix peptides to advance precision medicine by targeting specific overexpressed epigenetic modulators in cancers such as leukemia, breast, and pancreatic cancer. Anticancer peptides are powerful therapeutic tools due to their high target affinity and biocompatibility, resulting in more potent therapies with fewer adverse effects.

When and where did you start doing cancer research?

I began my journey into anticancer peptides during my undergraduate studies by collaborating on the synthesis and analytical evaluation of hydrophilic peptides. These peptides were later assessed for the treatment of breast cancer, and some were used to functionalize gold nanoparticles for the early detection of oncogenic HPV, a virus linked to cervical cancer.

Briefly, what are the most rewarding and most challenging components of your cancer research career?

As an early-career scientist, the most rewarding aspects have been the completion of various projects I've participated in. For instance, my Ph.D. research led to the development of multiple cationic branched peptides with significant potential to treat oral cancer, laying the groundwork for future research. As a postdoctoral researcher, training undergraduate and graduate students has been gratifying, especially when many choose to pursue scientific or healthcare careers. It's fulfilling to contribute to safer anticancer therapeutics while inspiring others to engage in cancer research.

On the other hand, the synthesis and purification of peptides pose challenges due to the large amounts of organic solvents required. Fortunately, advances in green chemistry have mitigated some of these issues, and our group is exploring more efficient peptide production methods.

Do you collaborate with external institutions?

Our research group has notably collaborations with MSK Cancer Center, CUNY Hostos Community College, and other institutions depending on each specific project.

What do you do for fun in your free time?

I love hiking and exploring nature as much as possible. We are fortunate to have breathtaking landscapes just miles from the city in the charming state of New York.



Sophie McCarrick

Senior, Institute for Collaborative Education High School,
Manhattan, NY

In 1-2 sentences can you describe your cancer research topic?

I'm looking at cyclometalating a ruthenium iminophosphorane compound and trying to characterize and isolate it, to see if it is as bioactive as the ruthenium iminophosphorane compound.

When did you know that you wanted to learn about cancer and start doing cancer research?

I started doing cancer research very recently. Initially I did not have any particular pull towards cancer research, but I met Dr. Contel two years ago, when she gave a talk at my school, and her work seemed really interesting. While in the 10th grade, I didn't understand all of the chemistry-specific vocabulary she used, I could tell that Dr. Contel was really knowledgeable and I thought it would be an amazing experience to work with her in the lab. Two years later, I emailed asked "can I join your lab?" and thankful she said yes. Although it wasn't cancer that I was specifically interested in to start—it was more about the learning experience—now I'm very interested in cancer research.

Briefly, what are the most rewarding and most challenging components of your cancer research experience with the BCCC-CURE?

I had no previous experience with labs, so there was a lot for me to adjust to. I learned how the dynamic of a lab works, which I think that was both the most rewarding and most challenging experience, because it was a lot for me to get used to, but it was also amazing for me to learn. Compared to being in a high school classroom, where I would sit through classes, take notes, etc., in the lab everything is hands on. It's a lot more practice than theory, and so it I got to learn how to do synthesis and other techniques I wasn't familiar with before. It was a completely new environment, which was really exciting.

What are your goals in the immediate and long term in STEM?

I'm going to be starting college and my major is going to be chemistry. I'm super excited about it. Eventually I was to get a PhD and get a job working in chemistry. I've decided, this is what I want to do for my entire life. Through my research experience, I've become a huge fan of drug discovery, but I think I want to work more with the brain in the future. I find that to be very interesting, so I focus more on biochemistry and drug development in an area like Alzheimer's research.

UPCOMING BCCC-CURE EVENTS

BCCC-CURE Fall 2024 Scientific Seminars and Symposia

Friday, September 20, 12:30PM – 1:30PM Joint BCCC-CURE, Psychology and Health and Nutrition Departments Scientific Seminar by [Dr. Florence Lui](#) (BCCC-CURE Clinician Scientist, Assistant Attending Psychologist at Memorial Sloan Kettering Cancer Center, Immigrant Health & Cancer Disparities Service, Department of Psychiatry & Behavioral Sciences) Title: “Stakeholder Perspectives on Developing a Multicomponent Support Program for Chinese Cancer Survivors: The Role of Culture and Community.” Hosted by Dr. Maria Contel in Room # 3143 Ingersoll.

Friday, October 18, 12:30PM – 1:30PM Joint BCCC-CURE and Chemistry and Biochemistry Department Scientific Seminar by [Dr. Wee Han ANG](#) (Associate Provost and Vice Dean, Faculty of Science at National University of Singapore). Title TBD, Hosted by Dr. Maria Contel in Room # 3143 Ingersoll.

Friday, November 1, 12:30PM – 1:30PM Joint BCCC-CURE and Chemistry and Biochemistry Department Scientific Seminar by [Dr. Benjamin Blass](#) "Sigma-2 and Alzheimer's Disease: A Therapeutic Opportunity." Hosted by Dr. Maria Contel in Room # 3143 Ingersoll.

Friday, November 8, 12:30PM – 1:30PM Joint BCCC-CURE and Biology Department Scientific Seminar by [Dr. Jill Bargonetti-Chavarria](#) (Hesselbach Professor Chair, Molecular, Cellular, and Development PhD Program Department of Biological Sciences Hunter College; Graduate Center, CUNY; and Adjunct Assistant Professor, Weill Cornell Medical College Department of Cell Biology). Title: TBD. Hosted by Dr. Jennifer Basil in Room # 3143 Ingersoll.

Friday, December 6, 9:00AM – 2:00PM First BC Cancer Related Health Disparities Symposium. Organized by BCCC-CURE, Psychology Department, Health and Nutrition Sciences Department, and BC Center for Health Promotion with participants from City College of New York, SUNY Downstate Health Sciences University, Memorial Sloan Kettering Cancer Center, Herbert Irving Comprehensive Cancer Center at Columbia University Irving Medical Center, and the Tisch Cancer Institute at Mount Sinai.

BCCC-CURE Fall 2024 Community Outreach Events and Education Sessions

September 2024: Community Back to School Health for the Whole Family with the collaboration of Memorial Medical Care, PC, & Memorial Sloan Kettering Cancer Center (MMC, PC and MSKCC) and New York City Blood Specialists (NYCBS) & Brooklyn Cancer Center.

October 2024: Cancer Prevention Information Session for the Community. Taking Action Against Cancer as A Black Women, with the collaboration of CUNY Haitian Studies Institute, BC Caribbean Studies, BC Puerto Rican and Latino Studies, BC Immigrant Student Success Office, Health and Nutrition Sciences Department and the participants from Maimonides Health, Mount Sinai Tisch Cancer Center, ACS Voices Program, New York City Blood Specialists (NYCBS), & Brooklyn Cancer Center and MSK Mobile Health Unit.

October 27th: Making Strides Against Breast Cancer Walk. Brooklyn College Against Cancer Team! Organized by the American Cancer Society.

November 2024: Education Information Session. “Health and Biomedical Opportunities at BCCC-CURE and our Partner Institutions” at BC Library Room 411 meet and greet lunch 1:30PM-2:00PM. Hosted by: Professor Jennifer Basil and Ms. Ana Bartolomé.

November 2024: Cancer Prevention Information Session for Students. Did You Know There Is a Vaccine Against Cancer? The HPV Vaccine Can Save Your Life! with the participation of MSK Mobile Health Unit and HPV Cancers Alliance.

Stay Connected!



Please visit our [website](#) to find timely information about our past and upcoming educational opportunities, community outreach events, and information about becoming a BCCC-CURE member.

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