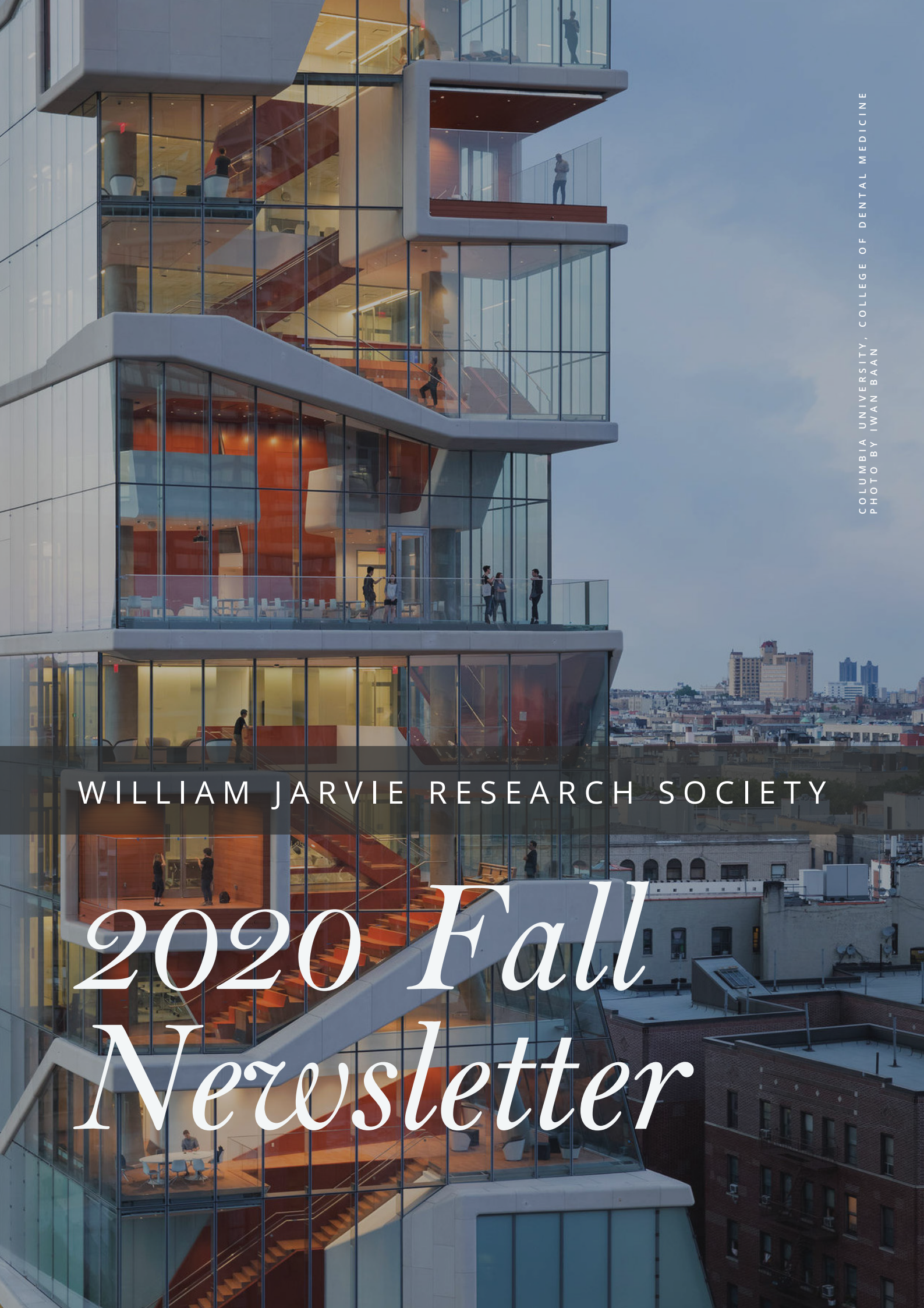

COLUMBIA UNIVERSITY, COLLEGE OF DENTAL MEDICINE
PHOTO BY IWAN BAAN

WILLIAM JARVIE RESEARCH SOCIETY

2020 Fall Newsletter

LETTER FROM THE PRESIDENT

Dear Members of the Columbia Dental Community,

Over the past year, we have faced numerous challenges in light of the global pandemic. With remote learning and limited in person gatherings, we had to find ways to adapt our programming to fit within these new constraints. Yet the resilience of our research community is impressive; through virtual means, our student researchers have accomplished a great deal this year. I am very proud of our student engagement in research and of the College of Dental Medicine's commitment to shaping the future of dental medicine and oral health. The William Jarvie Research Society is pleased to present the Fall 2020 issue of the Jarvie Newsletter, which highlights many of the successes of our Columbia Dental researchers, recaps our events from the past year, and presents original articles on a range of topics in dental research written by our members.

The William Jarvie Research Society (WJRS) is the Columbia chapter of the American Association of Dental Research National Student Research Group (NSRG.) Our goal as a society is to encourage every interested student to have a productive research experience at the College of Dental Medicine, and to expose our members to a variety of research opportunities at CUMC and beyond. Each year, the WJRS organizes a number of activities that support student research and emphasize the role of research in the development and practice of modern dentistry. This semester, we were excited to welcome over 40 new members from the class of 2024!

In May we held our first ever Virtual Birnberg Research Day, in which we celebrated Columbia Dental's student research program through virtual audio and visual poster presentations. Alongside this event, we published the first electronic issue of the Journal of the Jarvie Society, containing student research abstracts presented at the Birnberg Research Day. Many of our members have also had the opportunity to present their work at local, regional, national, and international dental meetings, receiving numerous awards for their research accomplishments. Throughout the year, we have continued our Lunch and Learn Series virtually, at which prominent faculty members are invited to give lectures on their current research. We have also presented our Research Opportunities Information Series virtually this year. This event series, geared especially towards first year students, provides practical advice on how to find and apply to research fellowships. As a part of this series, we also hosted a CV Writing Workshop. The WJRS looks forward to continuing our Lunch and Learn and Research Opportunities Information Series throughout the next semester. We also are excited to expand our advocacy efforts, led by Jarvie's Advocacy Chair, Aly Lemkuil, through participation in AADR's Virtual Hill Day this spring.

I would like to thank our Editor-in-Chief, Kira Chen, and our Vice-President, Rachel Cubilla, for their leading efforts in putting together this newsletter. I would also like to thank Vinay Maddula, Rivkah Melka, and Catherine Martini for their writing contributions. I must also thank the Jarvie executive board team for their dedication and efforts in event hosting over the past year, and Dr. Carol Kunzel, our club advisor, for her guidance and support. Finally, I would like to thank all of our Jarvie members – we could not have accomplished any of this without you. The new year is sure to bring lots of research-related excitement, and I hope to see many of you at our upcoming events!

Sincerely,

Madeleine Daily
WJRS President

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Birnberg Day

Recap & Awards Announcement

Written by Rachel Cubilla

Birnberg Research Day is an annual event at Columbia University College of Dental Medicine that highlights student research projects. The 63rd Birnberg Research Day was originally scheduled for Tuesday, April 7th. However, due to the COVID-19 pandemic and the rising number of cases in NY, the in-person event had to be canceled. In the spirit of resilience and innovation, the event was transitioned to an online platform where the posters were uploaded digitally along with a voice recording of the presentation with a maximum time limit of 5 minutes. This year 41 pre-doctoral posters and 9 post-doctoral posters were submitted in fields science ranging from molecular, cellular, tissue, physiology, regenerative medicine to social/behavioral sciences, education, health services and global health. The student scholars were mentored by 24 faculty members from across CDM, CUMC, the greater university, and international locations. Thirty-one judges reviewed the posters and asked the researchers about their work.

Winners were announced at the beginning of the CDM Summer Research Recap on Wednesday, November 11, 2020. This event featured CDM Summer Student Researchers and their mentors who presented their projects in progress from Summer '20. The results were:

Predoctoral – Basic Science

FIRST PLACE:

Investigating Specificity of Oxo-M and 4-PPBP to CD146+ Stem/Progenitor Cells

Ye Jin An, Gayoung Park, Eugenia Lee, Chang H. Lee

SECOND PLACE:

Cartilage Regeneration from Stem/Progenitor Cells Through Immunomodulation

Rishabh Rattan, Yujin Kim, Solaiman Tarafder, Chang H. Lee

THIRD PLACE:

Design and Construction of Human CRISPR Activation Guide RNAs for Epigenome Editing of Craniofacial Disorders

Silvia Baila, Michelle N. Skelton, Sunil Wadhwa, Christopher L. Ricupero

Predoctoral – Clinical/Translational Science

FIRST PLACE

Effects of transplacental Fusobacterium nucleatum infection in the postnatal neurological health of offspring

H. Kim, R. Oghaz, J. Oghaz, Y. Han

SECOND PLACE

Epigenome Editing for Endogenous Activation of Periodontal and Tendon Transcription Factors

Charlotte Martin, Michelle N. Skelton, Silvia Baila, Solaiman Tarafder, Christopher L. Ricupero, Chang H. Lee

THIRD PLACE

Metabolic profiling of mucosal and exocrine tissues in oral chronic graft-versus-host disease

Madeleine L. Daily, Ana C. Costa da Silva, Christopher Rudmann, Jacqueline Mays

Dual-Crosslinked Gelatin to Facilitate Stem Cell-Guided Fibrocartilage Healing

Alexander S. Litrel, Juliet L. Allen, Robert Stanciu, Eugenia Lee, Solaiman Tarafder, Chang H. Lee

Predoctoral – Social/Behavioral Sciences – Public Health

FIRST PLACE

The Impact of Language Barriers On Patient-Provider Communication From The Perspective of Dental Students

Mary Nguyen, Arlene Smaldone

SECOND PLACE

Barriers to ECC Disease Management in NYC Pediatric Dentistry Residency Programs

Tammy Kumar, Ivette Estrada, Burton L. Edelstein

THIRD PLACE

Barriers to Child Nutrition & Oral Health Among Families at an Upper Manhattan Head Start Program: A Community Needs Assessment

Kevin Eagan, Sydney Shapiro, Mari Millery, PhD, Emily Byington

Pain Medication Prescription and Use After Oral and Maxillofacial Surgery Procedures

Glenna Lee, Samuel Fleisher, Kevin Lee, Alia Koch

Post-Doctoral

FIRST PLACE

Evaluation of Recovery Time of PO Midazolam

P. Chan, C. Lumsden, A. Myers

SECOND PLACE

Implementation of the 2018 Classification of Periodontal Diseases and Conditions: A Study of Dental Electronic Health Records

Muhammad Raza, Jaffer A. Shariff, Joseph Wang, Panos N. Papapanou

THIRD PLACE

FadA Modulation Impedes Fusobacterium nucleatum Mediated Periodontal Bone Loss

S. Mehrazarin, Q. Meng, S. Robinson, E. Gyo, Y. Han

AADR Advocacy Day

Written by Ali Lemkuil

Each spring, Jarvie members are proud to annually participate in Advocacy Day on Capitol Hill in partnership with the American Association of Dental Research (AADR) and American Dental Education Association (ADEA).

Advocacy Day in Washington D.C. provides dental students from various programs the opportunity to meet with members of U.S. Congress and other important policymakers of dental legislation to advocate for funding for dental research. In these interactions with Congressional office members, we discuss the intricate relationship between oral and systemic health to highlight the necessity of cranio-maxillofacial research for the overall health of the individual. Additionally, we share with policymakers our personal testimonies regarding our experiences performing dental research, and why we believe that Congress should provide bipartisan support for funding requests of the National Institutes of Health (NIH) and National Institute of Dental and Craniofacial Research (NIDCR) to continue to support this essential research.

The day begins in the morning, where students have informational sessions and briefings related to key issues in dental policy and areas of ongoing dental research. Some of the important areas of research supported by the NIDCR that were discussed at 2019 Advocacy Day include research on the oral microbiome, the opioid crisis, e-cigarettes, enhanced tissue regeneration, oral cancer and oropharyngeal cancer, cleft lip and palate, and many others.

As the day progresses, dental students are briefed regarding the specific "Asks" of the visit, or precisely what requests we are presenting to Congress on behalf of the AADR. In 2019, the AADR asked members of Congress to support funding levels of at least $41.6 billion for the NIH and at least $492 million for NIDCR. Students are then divided into private meetings with staff members from different Congressional offices for private conversations regarding the importance of dental research and the corresponding need for federal funding of these research projects.

Most importantly, these intimate conversations with staff members enable us as students to help advocate for our future profession, as well as our future patients, now.

The AADR Hill visits were unable to occur in person in 2020 due to the COVID-19 pandemic, but the AADR created "Virtual Hill Toolkits" that enabled Jarvie members to continue to advocate for dental research remotely. We are hopeful that Advocacy Day 2021 will again be able to occur in person, but Jarvie members are prepared to continue our advocacy efforts online if required. For additional information regarding AADR Advocacy Day, please check out their website (https://www.iadr.org/2020_Virtual-Hill-Day), or reach out to Jarvie's Advocacy Chair, Ali Lemkuil (al3795@cumc.columbia.edu).

Thank you for joining us in our continued support of funding for dental research!

Written by Catherine Martini

Prepared Serendipity:

Dr. Kunzel's Coincidental Journey to STEM

The field of STEM is wonderfully vast, spanning from coding masterful applications to composing vaccines with pipettes to restoring teeth on patients. Having such an expansive use in our 21st century world, STEM has seeped into many areas of our lives. One instance of the universality of STEM is seen in the career path of the College of Dental Medicine's very own Dr. Carol Kunzel, Ph.D.

Dr. Kunzel found her way into STEM, more specifically dentistry, in a very unexpected way. She began thinking about a career in research as a graduate student. However, at that time, her field of practice was quite removed from the physical sciences, as she was a Sociology doctoral candidate at New York University. Throughout graduate school and the beginning stages of career, several mentors altered the trajectory Dr. Kunzel's path. Under the mentorship of several medically-focused professionals, Dr. Kunzel's research focus transformed from a strictly sociological to a medical perspective resting on the intersection of public health and the practitioner's mindset.

One of these influential mentors was Dr. Donald Sadowsky, D.D.S., Ph.D. Dr. Sadowsky's career encompassed the intersection of public health and clinical care, as he obtained doctoral degrees in both sociomedical science and dentistry. After graduating with her Doctorate in Sociology, Dr. Kunzel knew she wanted to pursue a career in research. By happenstance, she met Dr. Sadowsky and began collaborating with him on an NIH-funded research project at Albert Einstein College of Medicine. This study entitled "RX for Dental Patients at Risk of Endocarditis" focused on the diffusion of knowledge among dentists regarding the American Heart Association's recommendations on preventative care. Her co-authored article in The Journal of the American Dental Association (JADA) initiated Dr. Kunzel's career in the realm of evidence-based dentistry.

After working together for several years at Albert Einstein College of Medicine, the two moved to Columbia University College of Dental Medicine. Both have held academic roles in the College of Dental Medicine as well as Mailman School of Public Health. Currently, Dr. Kunzel is a Professor of Dental Foundational Sciences and serves as a Professor of Sociomedical Sciences at Mailman School of Public Health. She teaches two courses titled Research Methods and Biostatistics in the post-doctoral curriculum and co-teaches Oral Healthcare Delivery to third year dental students, while focusing on the importance of evidence-based dentistry in her classes. In addition to her role in the classroom, she serves as the Director of Research at the College of Dental Medicine. During her time at CDM, Dr. Kunzel has had an impact through educating future dental providers as well as fostering opportunities for student oral health research.

Dr. Kunzel's career distinctly shows many accomplishments within the fields of dentistry, research, and population health. But perhaps the most telling part of her story is the serendipitous nature of her path. Dr. Kunzel's story highlights the positive in not knowing what opportunities lie beyond our educational lives. Often due to social and internal pressure, students feel the need to meticulously plan every career step, as if in a game of chess. However, Dr. Kunzel's willingness to immerse herself in STEM and the unexpected opportunities that came her way, should act as a model to approach each new experience with an open mind.

CDM Researcher News

Written by Rachel Cubilla

This year fourteen teams of Columbia faculty were awarded a Columbia Life Science Accelerator grant to support translational research. This grant supports cutting-edge translational research addressing myriad conditions and disease, including cancer, heart disease, depression, and Alzheimer's. The recipients of the Life Science Accelerator grants are focused on research and inventions that are on a path to commercialization or the clinic via novel therapeutics discovery or technologies and devices that have the promise to change the way patients are being treated or diagnosed. Amongst the recipients were two CDM faculty members, Yiping Han, PhD, and Fatemeh "Flora" Momen-Heravi, DDS, PhD.

Dr. Yiping Han

Dr. Yiping Han's laboratory focuses on the human microbiome and the vast population of microbes that play an essential role in health and disease. Dr Han's research interests include host-pathogen interactions, human microbiome and oral-systemic connections. The work in her laboratory is focused on investigating the role of oral bacteria in extra-oral infection and inflammation, investigation the mechanisms of Fusobacterium nucleatum pathogenesis in pregnancy complications and gastrointestinal cancers; and developing genetic tools for mutant construction in bacteria. Dr. Han was awarded the Columbia Life Science Accelerator grant under the Accelerating Cancer Therapeutics category for her work with Co-Investigator Timothy Wang, MD, professor of medicine. Their project is researching the impact of antibody therapy on familial adenomatous polyposis, Dr. Han and her lab previously identified a novel oncotarget to treat this inherent disease. Their project will focus on the use of antibody therapy to reduce the tumor load in order to prevent or delay the need of surgery.

Dr. Flora Momen-Heravi

Dr. Flora Momen-Heravi is a clinician-scientist at Columbia University Medical Center and a member of the Hervert Irving Comprehensive Cancer Center. Her research interests are focused on understanding the interplay between the immune system and tumors to identify actionable molecular targets for head and neck cancer and other solid tumor treatments; examining the role of extracellular vesicles/exosomes in metastasis and mediating cellular cross talk, and hacking this cross talk by genetic engineering; as well as exploring the role of innate immunity in the pathogenesis of periodontal disease and its convergence with diabetes and carcinogenesis. Dr. Momen-Heravi was awarded the Columbia Life Science Accelerator grant under the Translational Therapeutics Accelerator category for her work co-funded by the Accelerating Cancer Therapeutics (ACT) program. Her project focuses on utilizing the body's natural transport system as a delivery platform for targeted gene editing in the lung for the treatment of Non-small cell lung cancer (NSCLC). Dr. Momen-Heravi has developed engineered exosomes with the capacity to directly target the KRAS oncogene with CRISPR/Cas technology (CASexo). These CASexos have lung-specific targeting moieties on their surface and are able to carry endogenous active Cas9 proteins and sgRNA targeting the specific KRAS mutation. The goals of this study are to demonstrate that exosome delivery of KRAS-targeted gene editing are effective in animal models of NSCLC.

Event Recap:

Tips for Reaching Out to Research Mentors and CV Workshop

Written by Maura Lynch

It can sometimes be challenging to connect with a research mentor or to figure out how to highlight your strengths on your CV. To provide some guidance in these areas, Jarvie hosted guest speakers Dr. Sunil Wadhwa, director of Columbia's Division of Orthodontics, and Dr. Catherine O'Hea, Assistant Professor of Orthodontics, this November. Dr. Wadhwa and Dr. O'Hea shared with us advice about reaching out to potential research mentors and CV writing strategies. Below we have compiled a list of tips and recommendations to help you succeed in these endeavors.

Tips for Reaching Out to Potential Research Mentors

Who to reach out to:

- Faculty who do full time research are often the ones looking for summer research students
- Residents often need help with their research and you can reach out to them directly rather than going through a faculty member
- You can also reach out to the medical school faculty or professors in the basic sciences

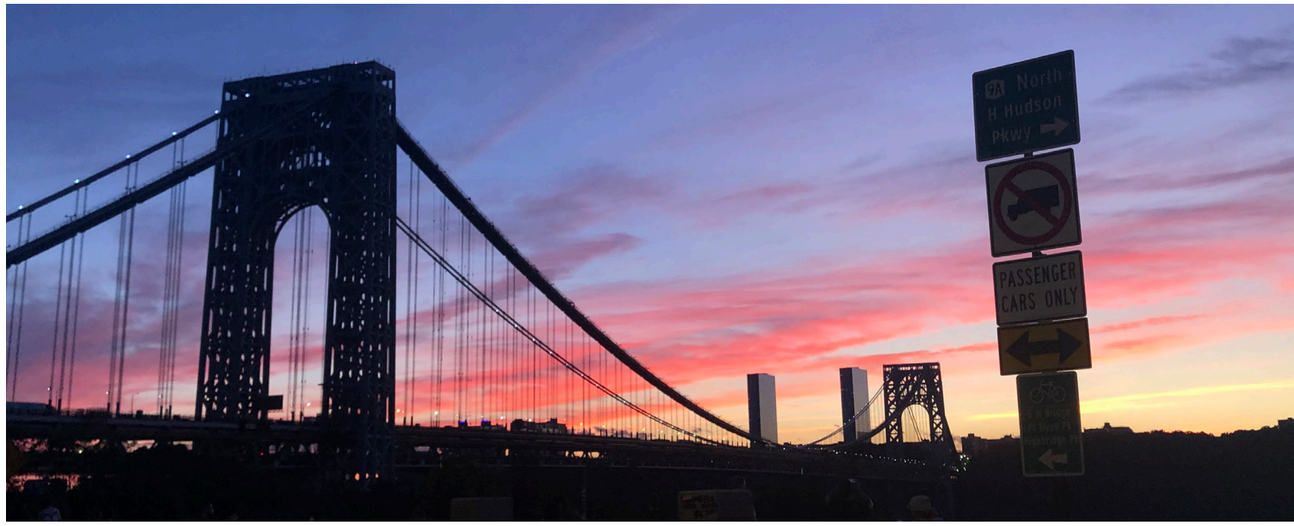
How to reach out to potential mentors:

- Email them and stay persistent; you may need to send multiple emails to someone before getting a response
- Ask them in person - come to clinic or schedule a meeting*
- Past research experience is not required, but it is important to show interest in the mentor's research when reaching out to them
- *** Some clinics are not allowing visitors at this time due to COVID-19

CV Writing Tips

Formatting:

- Try to limit your CV to 1 page, do not exceed 2 pages
- In the first section of your CV, list where you went for undergraduate and dental school, your academic performance at each school, and awards you received
- In the second section of your CV, highlight what emphasize what you wrote about in your personal statement
- At the bottom of your CV include other interests and skills, languages spoken, etc.



Things to include:

- Research & submitted publications
- Community service, extracurriculars & leadership positions
- Conferences that you presented at

Things you might not want to include:

- Being a general member of a club or organization
- Conferences that you attended (but did not present at)
- Societies that you belong to but do not have a leadership role in
- Accomplishments from undergrad, unless they are important and highlighted in your personal statement
- Dental assisting and shadowing

General Recommendations:

- Be an expert about everything you put in your CV - you should be able to have an in-depth discussion about everything listed
- It's ok to be repetitive; your CV, personal statement and recommendation letters should all match up in highlighting your strengths
- Only include the most significant information you want to highlight
- Do not oversell or undersell yourself in your CV
- Ask a friend to look at your CV - do they think it is representative of who you really are?

Things residency directors might look for in a CV:

- Academic Performance: class rank, test scores, letters of recommendation from professors
- Research experience, presenting research at national and international meetings and publications

Written by Rachel Cubilla

How to Get Involved in Research

One of the best days of many of CDM's students' lives started with an e-mail that said, "Congratulations! You've been accepted to be a member of Columbia University College of Dental Medicine." After years of hard work and dedication you have been accepted into a top program. D1 year is full of excitement as students move to the big city to begin professional training. As you begin this journey, a lot of questions come up, one that crosses many students' minds, whether it be D1 year or later on, is how do I get involved in research while in dental school?

It is highly encouraged that all students who are interested or want to learn more about research join the William Jarvie Research Society (Jarvie for short). We are the Columbia University chapter of the American Association of Dental Research, National Student Research Group (AADR NSRG), a student-run organization composed of a network of local student research group (SRG) chapters at each dental school and led nationally by elected officers. Our goal is for every interested student to have a productive research experience at the College of Dental Medicine, and members should gain exposure to a variety of research opportunities at CUMC and beyond. Jarvie provides members with many resources and events to help students find research mentors and opportunities, present research and more.

The first step to getting involved in research during dental school is to find a project and/or a lab whose work interests you. Research can be done with any Columbia faculty (P&S, Mailman, School of Nursing, Morningside campus, etc.) and isn't restricted to CDM researchers only. Another great opportunity is the Columbia International Collaboration Exchange Program ("Columbia ICE Program") that prepares students for international leadership roles and global collaborative problem solving in healthcare. The CDM website Research page is a great place to get started, it features: research areas, research center and labs, research faculty, clinical trials, research resources and student research. Another great resource is the Jarvie Mentor Guide that highlights Columbia research mentors, their research interests and some of the projects they've done with students. While at CDM, students develop relationships with professors and can discuss with them the possibility of joining an ongoing research project or even starting a new one. And finally, don't be shy about reaching out to upper classmen! Whether it be in-person or over text message, the CDM student body is all about collaboration and mentorship.

Approaching a faculty member who'd you like to work with can be as simple as an e-mail introducing yourself, letting them know that you're interested in their research and would like to meet with them. Some students attach their CV but it's up to you and what you feel comfortable with. If it's been a while and a faculty member hasn't gotten back to you, it's perfectly appropriate to send them a follow-up e-mail keeping in mind that they are very busy. Something that should not discourage anyone from reaching out is a lack of previous research experience. Many students at CDM have no to limited previous research experience and go on to have an enriching and fruitful experience. Mentors want to see that you've taken the time to read about what their research focuses on and that you're driven to be a part of it.

Once you've secured a mentor, you can begin applying to fellowships in the Winter/early Spring for summer research.

How Covid-19 Impacted Research at CDM

Written by Rivkah Melka

The possibility of national shutdowns due to Covid-19 began to surface just as Columbia dental students were finalizing their summer research plans. Applications for summer fellowships were sent, positions were accepted, and students were beginning to create timelines for research projects they hoped to work on over the summer. However, slowly the reality set in that these plans would no longer be possible. The International Collaboration and Exchange Program led by Dr. Anette Wu was among the first programs forced to cancel research, and was rapidly followed by many programs across the country that closed its doors to student research.

Understandably, Columbia dental students could have resigned themselves to putting a hold on research plans while waiting for the pandemic to improve. But true to their passion for discovery and science, they were not satisfied with simply waiting in anticipation. Taking a proactive stance, the dental students collectively decided they would adapt their research to fit this new reality. With flexibility and determination, Columbia students used ingenuity and creativity to conduct research safely and responsibly despite the barriers created by the pandemic.

The dental students used a variety of approaches to engage in research during Covid-19. Some students modified their project by concentrating on the remote components of their research. For example, one dental student compiled a database of systemic diseases that manifest in the oral cavity, while another student conducted a comprehensive analysis of reported genetic mutations in patients born with a congenital disease. Taking advantage of technology to communicate with patients, some students resorted to sending surveys via email. Other students took the creative approach of using an Apple watch to monitor patients and collect data remotely. Students decided to focus on what could be done instead of ruminating over what was no longer possible.

Some students, inspired by the new reality created by the pandemic, decided to focus their research efforts on better understanding the impacts of the pandemic on healthcare. Projects addressing Covid-19 included evaluating the economic impact of the virus on dentists, assessing mental health among dentists during the pandemic, studying the effects of telehealth on effective communication, and considering if Covid-19 had an effect on dental students' professional goals and opinions. These vital questions served to explore the new reality of a profession that was significantly impacted by the virus.

Although the pandemic made research more challenging and limited, it only demonstrated the resourcefulness and innovation of the Columbia dental students. Dr. Carol Kunzel, director of research at the Columbia University College of Dental Medicine, organized a summer research recap event in the fall for students to share any research they were able to conduct. Expectations were low due to the clear constraints Covid-19 placed on research. However, the students and faculty present at the zoom meeting were stunned and impressed to learn of the extent of their peer's accomplishments despite the challenges imposed.

Bessie Delaney: Harlem's Dentist and Civil Rights Advocate

Written by Vinay Maddula

Born on September 3rd, 1891 to a former slave, Annie Elizabeth "Bessie" Delaney observed and participated in the growth and progress of the African American community in New York. Exposed to racism from an early age in the form of unjust Jim Crow laws or comments from white passerby, she fought fiercely for what she deserved, not hesitating to call out injustice or inequality. Bessie knew that "the darker you are ... the harder it is"; in spite of that she ignored "Whites Only" signs and spoke her mind to aggressive and confrontational white men. Her refusal to adhere to the status quo propelled her to achieve despite adversity.

Bessie's family emphasized education and service, and that was reflected in her work ethic: she worked as a teacher in Georgia to support herself and her family during her secondary and undergraduate education. That drive for service and better opportunities led her to New York in 1917, on the cusp of the Harlem Renaissance. There she enrolled in Columbia University School Dental and Oral Surgery (renamed College of Dental Medicine in 2006) in 1919, as the sole black woman in a class of around 200. Graduating 4 years later, she became known as "Dr. Bessie, Harlem's colored woman dentist" as well as the 2nd black woman to ever receive a license to practice dentistry in New York. She stayed uptown, seeing patients from all backgrounds and incomes, including serving Harlem's poorest. In her 27 years as a practicing dentist, she never raised her rates once from "$2 for a cleaning and $5 for a silver filling," allowing her to continue doing the work she loved while maintaining the oral health of her patients.

Dr. Bessie's office became a meeting place for many of Harlem's activists in the 1920s, such as E. Franklin Frazier and W. E. B. Du Bois. These acquaintances befitted a woman who enthusiastically participated in civil rights marches around the borough and had multiple confrontations with the Ku Klux Klan of Long Island. She adhered to Du Bois' philosophy that true societal change can only occur through public dissent and demonstrations. Though her time as "Harlem's colored woman dentist" came to an end prematurely in 1950 as she had to tend to her sick mother, she never lost her "urge to change the world."

At 100 years of age, she, her 102-year old sister Sadie, and a New York Times reporter published Having Our Say: The Delany Sisters' First 100 Years, an extremely successful biography-turned-Broadway play of their lives. Readers got to know Dr. Bessie and how she fought through tremendous substantial obstacles to become a pioneer for women and individuals of color in New York City and beyond.

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Jarvie E-Board

Madeline Daily

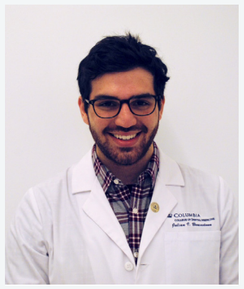
PRESIDENT | C/O 2022

Madeline participated in the summer research fellowship at the NIH National Institute of Dental and Craniofacial Research in Bethesda, MD during the summer after D1 year. Based on her application and interests, she was placed in an immunology lab, where she studied the oral manifestations of graft vs. host disease. It was a great opportunity for her to experience dental research outside of CDM and meet other students from around the country! During her D3 year, she had the opportunity to work with a dental resident here at CDM on her project examining the effects of osteocyte apoptosis on orthodontic tooth movement. It goes to show, it's never too late in your dental student career to get involved with research at CDM! Her best memory doing research is from her time at the NIH NIDCR, where she worked with a number of other summer students and postbacs. They would all work together once a week to collect tissue samples -- it was always entertaining, to say the least! Outside of school/research, she enjoys running and spending time with friends when possible!

Rachel Cubilla

VICE PRESIDENT | C/O 2022

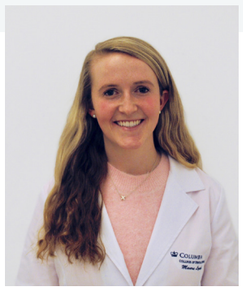
Rachel was a recipient of the CDM Summer Research Fellowship in 2019 and worked in Dr. Yiping Han's lab. Her project focused on Listeria monocytogenes colonization in mice and the objective was to determine if different strains colonize non-pregnant and pregnant mice differently. It was her first time working with animals and she considers it a great learning experience. Her best research related memory is working in the mice room with Heather where they helped each other out. Outside of school and research, she enjoys trying out new restaurants in the city and spending time with her family.



Julian Bensadoun

TREASURER | C/O 2023

Julian feels very fortunate to have had the opportunity to work in Dr. Chang Lee's lab the summer of 2020. Dr. Lee's lab focuses on the recruitment of endogenous stem cells to repair injuries that surgery alone is unable to correct, specifically, in meniscus tissue. He spent his time there working on two projects. First, he developed a surgical technique to create defects in the lateral meniscus of sacrificed mice, so that this technique can be used in future experimental protein knockout mice models. The bulk of his summer was spent identifying proteins on the torn surface of damaged meniscus tissue which bind and anchor a meniscus surface lubricating protein called lubricin. Some of his best memories from his research experience includes spending time with his classmates JT and Amanda. Although it was a socially distanced research experience, they had an amazing time collaborating, learning from each other, and laughing along the way! Fun fact: Julian is an avid sourdough bread maker!



Maura Lynch

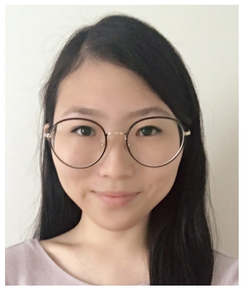
SECRETARY | C/O 2023

Maura had the privilege to work with Dr. Lynn Tepper, Dr. Steven Chussid, and Dr. Renuka Bijoor on her CDM Summer Research Fellowship project. They are working on a questionnaire - based pilot study to determine if the adequacy of special needs dental education has had an impact on providers' professional behavior, practice characteristics, attitudes, and confidence when treating these patients and managing their dental anxiety. The study will address the importance of preparing dentists to treat this population in effort to improve dental education in this area. Outside of school and research she enjoys spending time with family and friends, working out, and exploring NYC. Some of her favorite things to do in New York are trying new restaurants and going to Broadway shows.

Amanda Segel

COMMUNICATIONS | C/O 2023

Amanda began working in the Regenerative Engineering Lab at CDM this past summer where she had a wonderful experience working with Dr. Lee and Dr. Park. Her project relates to the regeneration of tendon tissue and periodontal ligament. With an undergraduate exercise physiology background, this project peaked her interest as she's fascinated by the potential to improve healing of sports-related injuries such as tendon tears. Now, as a dental student, she's equally amazed by the possibility of regenerating periodontal ligament to restore dental wellbeing. Her favorite research experience has been working with stems cells extracted from human periodontal ligament. Outside of school and research she has a passion for wellness and exercise, she teaches yoga and meditation in her spare time She also enjoys exploring the city (in non-COVID times), drawing, painting, and FaceTiming her Boston Terrier, Lola.



Glenna Lee

EDITOR IN CHIEF | C/O 2022

Glenna worked with Dr. Koch, Dr. Lee, and Sam, another D3, on quantifying peri-operative pain and need for opioid analgesics after a variety of common OMFS procedures. Her best memory was getting to work with Sam and all the patients they met. In her spare time she enjoys baking, horror TV shows, and jewelry hand-rendering.

Emily Horowitz

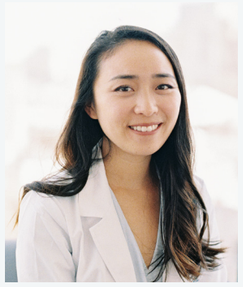
ASSISTANT EDITOR | C/O 2022

Emily was a recipient of the CDM Summer Research Fellowship in 2019 and participated in research under the mentorship of Dr. Wendy Chung in the Department of Human Genetics and Precision Medicine. Her research focused on KIF1A Associated Neurological Disorder (KAND), which is a rare genetic condition that results in progressive neurodegenerative disease commonly seen in the pediatric population. They used motor data collected from individuals and their families through use of the Vineland Adaptive Behavior Scales-II questionnaire and stratified the data based on age and mutation severity. Their goal was to define motor phenotype based on specific age and mutation. She has presented her research at The New York Greater Dental Meeting 2019 and at CDM's very own Birnberg Research Day 2020. Her best research related memory was attending the KIF1A two-day conference where she was able to meet families affected by KAND from all over the world. Outside of dental school she really enjoys baking and cooking and even recently learned to make homemade pasta!

Heather Kim

ASSISTANT EDITOR | C/O 2022

Heather worked in Dr. Yiping Han's lab and her research focused on investigating the effects of transplacental Fusobacterium nucleatum infection in the postnatal neurological health of offspring. Her best memory doing research at CDM was getting to work with Rachel in the mouse room! Outside of school and research, she enjoys trying out new recipes and board games.



Kira Chen

ASSISTANT EDITOR | C/O 2023

Kira plans on starting a research project in the spring of D2 year. In the past, she has worked on various projects across multiple disciplines -- some have taken her on a small motorboat into a San Francisco slough, while others had her running pharmaceutical particles through porcine skin samples. Her favorite research memory was in her junior year of undergrad, when she and her lab buddy stayed past 9pm to finish their work, cryosectioning batches of mouse brains to a curated Spotify playlist. Outside of school, she enjoys running her photography business, visiting art museums, and taking walks in the city and its beautiful parks.

Ali Lemkuil

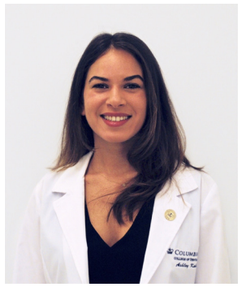
ADVOCACY CHAIR | C/O 2022

Ali participated in summer research here at Columbia as a member of Dr. Gharavi's Nephrology laboratory. By utilizing the skills she learned from Jarvie, she was able to find a research position that combined her interests in first year medical classes as well as her passion for oral health. Her project focused on the implementation of oropharyngeal and intestinal microbiome sampling for patients with Chronic Kidney Disease (CKD). Their research questions were how do the oral and intestinal microbiomes play a role in the immune response in CKD patients, and are there significant differences in the microbiome compositions of patients with CKD compared to matched healthy controls. The goals of this project included constructing an IRB amendment to implement microbiome sampling for the genetic studies of these patients, creating analytic pipelines to analyze 16S-rRNA sequencing data to create taxonomic profiles of the microbiome composition, and most importantly, to utilize microbiome sampling to provide further insight into the pathogenesis of CKD and help provide individualized care based on the patient's unique microbiome. Ali's favorite memory related to research at CDM was participating in the American Association of Dental Research (AADR) Advocacy Day on Capitol Hill. At this event, together with other Jarvie members, they were able to meet with members of federal congress to advocate for funding for dental research. Outside of school she enjoys running along the Hudson, learning about British politics and the Royal Family, watching American football, and spending time with family and friends.

Samuel Fleisher

D3 REP | C/O 2022

Samuel helped conduct a study about patients' pain levels and pain medication usage after OMFS procedures. This research was funded by the Columbia Summer Research Grant and the Research Liaison Grant. His best memory from doing research at CDM was getting to present his research at the annual Birnberg Day! When he has free time, he enjoys hanging out with friends, trying different restaurant in the city, spending time in central park, and playing/watching sports.



Ashley Kahen

D2 REP | C/O 2023

Ashley's research experience focused on investigating pathogenic variants of the SLC6A1 gene with Dr. Wendy Chung. She enjoys spending time outdoors and frequently goes on walks in the city, hiking, or even just studying outside gives her some energy.

Lexi Catalano

D1 REP | C/O 2024

Lexi is our D1 rep and plans on getting involved with research at CDM starting the summer after D1! She previously worked along with an Engineering PhD student at the University of Virginia to create an artificial intelligence model to standardize the measuring process for biopsy structures present in celiac disease and quantify cell types in eosinophilic esophagitis. Her favorite memory of doing research was learning how to work with an interdisciplinary team. It taught her how to communicate well with individuals with different educational backgrounds and was very interesting to work together to create solutions for problems arose throughout our project. Outside of school and research, she's gotten into cooking especially during quarantine. She also loves exercise/hiking and getting out into the community to volunteer.

Princy Bhardwaj

ADVANCED STANDING REP | C/O 2022

Princy is interested in Telehealth, innovations in healthcare technology, veneers and digital dentistry.

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