

Dear Readers

It is with great pleasure that the CUSJ team presents you with the 17th volume of the Columbia Undergraduate Science Journal. Since 2006, CUSJ has worked to elevate scientific journalism among undergraduates and provide a forum for showcasing their achievements.

To honor our journal's 18-year legacy, we took a step back to conduct a major refresh of editorial committee members, policies, and practices. We pride ourselves on following a strict code of ethics, a rigorous peer review system, and an inclusive author support program. Maintaining these standards requires annual updates to our practices, allowing us to publish more works and provide our authors effective support. We appreciate your patience with us this year, and we look forward to offering our dear readers and student researchers a better journal each year. It is imperative that we put 100% of our best efforts into editing and publishing exceptional work, despite the committee improvements we spent extra time working on this year. Therefore, we thought it was best to publish a short special edition for the 2023 Columbia Undergraduate Science Journal, solely featuring the strongest submissions from the year.

On behalf of the entire editorial team, I'd like to thank every student who submitted their hard work. The Columbia Undergraduate Science Journal is a space to celebrate and promote budding scientists like all of you, and we're looking forward to reading more of your work in the future. I'd also like to give a special congratulations to our published authors. Your innovative ideas and thoughtful experiments are what keep our journal at the forefront of undergraduate scientific discourse, inspiring and informing both peers and professionals alike.

I want to give a special shout-out to the CUSJ editorial committee. I onboarded a lot of new members this year, and they did a phenomenal job editing their first journal. I'd also like to thank the club's other Editors-In-Chief on our e-board for supporting me as I trained new members and worked on revamping our editing and publication process for the new year. I couldn't have done it without your support. Finally, I extend my gratitude to our Faculty Advisory Board and the advisors at Columbia Libraries, whose assistance has been instrumental in enabling us to deliver research of the utmost quality.

It was an honor serving as the Editor-In-Chief for the 2022-2023 edition of CUSJ, and I am looking forward to coming back stronger with the 2023-2024 edition.

Thank you for reading CUSJ!

Sincerely,

Kynnedi Simone Smith

Editor-In-Chief, Columbia Undergraduate Science Journal