

Dear Readers,

I, along with the rest of the CUSJ board, are ecstatic to present you with the 16th volume of our publication. Since its inception in 2006, CUSJ has strived to promote scientific journalism among undergraduate students and help foster a deeper appreciation and enhanced engagement for everyone in the science community. In this regard, I hope this issue will do exactly that.

This issue encompasses a wide range of topics in hopes that you as a reader will be able to resonate and immerse yourself with the research presented such that you, too, feel provoked to challenge, corroborate, and contribute to the deeply enriching discussions that these articles naturally invite.

This publication is a culmination of a year of hard work from the CUSJ team. Specifically, I would like to thank the editorial board for their input in reviewing and selecting the articles presented in this issue as well as the CUSJ committee who were always so dependable throughout the year and were responsible for editing the articles alongside the authors. Without them, this publication would not have been possible. In addition, I would like to thank our president, Arjun Kudinoor. Throughout the year, Arjun was always able to provide great feedback to improve our processes and was a guiding hand in ensuring that this specific publication lives up to, if not exceeds, the quality that has come to be expected from those before it. I am truly excited for what is to come for the future of CUSJ given Arjun and the rest of the board's dedication to improving and setting up a foundation for CUSJ to succeed in the long-term, which is especially apparent with the inaugural publication of the Columbia Scientist this May led by Aaron Jackson. Lastly, I would like to thank the CUSJ Faculty Advisory Board, whose support has helped us greatly in allowing us to present you with research of the highest standard.

And with that, it is my honor to present you with the 2021-2022 edition of CUSJ. It has been a privilege serving as CUSJ's Editor-in-Chief and I cannot wait to see what is to come!

Thank you so much for reading and supporting CUSJ!

Kazi Rabbe  
Editor-in-Chief, CUSJ  
Columbia Undergraduate Science Journal