



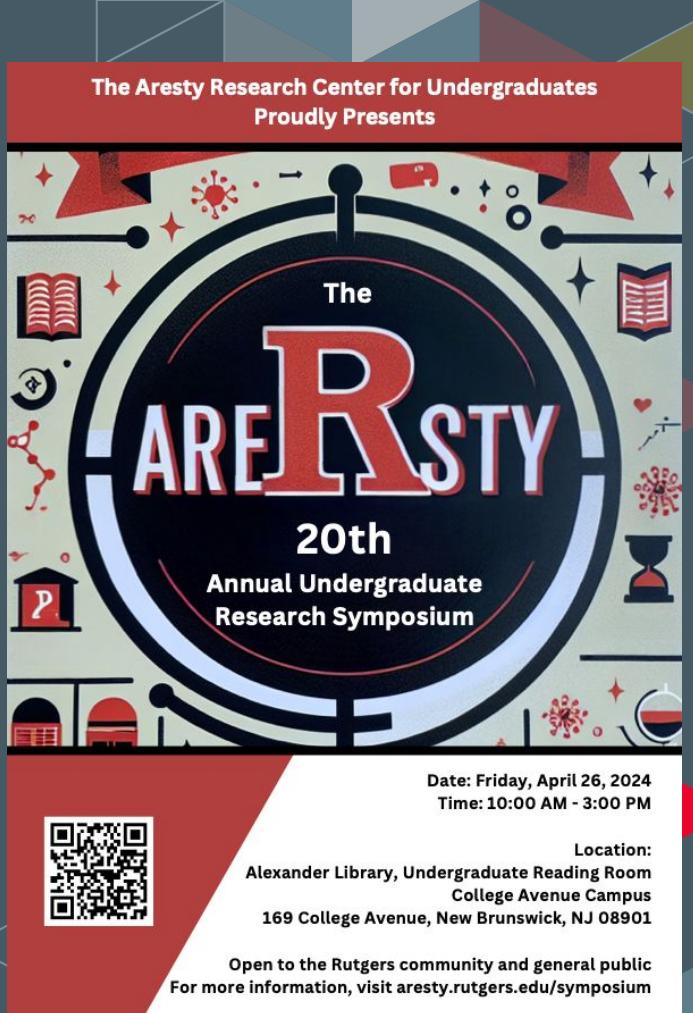
Aresty Research Center
for Undergraduates

Aresty Achievements Spotlight

The 20th Annual Undergraduate Research Symposium | April 26, 2024



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Diya Surray

cauthored a paper published in Scientific Reports, and was awarded the DLS SURF fellowship at Rutgers at 2023.



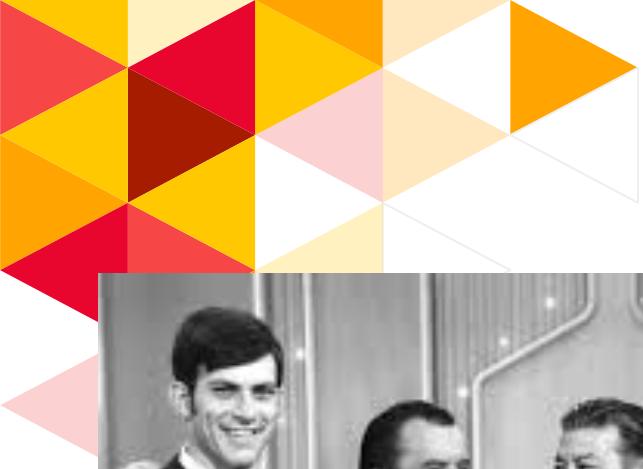
OPEN

Whole transcriptome screening for novel genes involved in meiosis and fertility in *Drosophila melanogaster*

Siqi Sun¹, Tyler Defosse², Ayla Boyd², Joel Sop², Faith Verderose², Diya Surray², Mark Aziz², Margaret Howland², Siwen Wu², Neha Changela², Janet Jang², Karen Schindler^{1,3}, Jinchuan Xing^{1,3} & Kim S. McKim^{1,2,3}

Reproductive success requires the development of viable oocytes and the accurate segregation of chromosomes during meiosis. Failure to segregate chromosomes properly can lead to infertility, miscarriages, or developmental disorders. A variety of factors contribute to accurate chromosome segregation and oocyte development, such as spindle assembly and sister chromatid cohesion. However, many proteins required for meiosis remain unknown. In this study, we aimed to develop a screening pipeline for identifying novel meiotic and fertility genes using the genome of *Drosophila melanogaster*. To accomplish this goal, genes upregulated within meiotically active tissues were identified. More than 240 genes with no known function were silenced using RNA interference (RNAi) and the effects on meiosis and fertility were assessed. We identified 94 genes that when silenced caused infertility and/or high levels of chromosomal nondisjunction. The vast majority of these genes have human and mouse homologs that are also poorly studied. Through this screening process, we identified novel genes that are crucial for meiosis and oocyte development but have not been extensively studied in human or model organisms. Understanding the function of these genes will be an important step towards the understanding of their biological significance during reproduction.





Suveer Puthur was awarded a 2023 scholarship from the Class of 1969 for academic excellence.



"1969...It was the year we witnessed "one small step for man" and Woodstock become the stuff of musical legend. A year of political and social turmoil, love, and war."

Julianne Chan was published as a co-author in two journals and will be giving an oral presentation at a national conference in May 2024. Julianne was also selected as a Goldwater scholar and NOAA Hollings Scholar. This summer, Julianne will research PFAs concentrations in passive water samplers in Charleston, SC.





Isabel George received the Presidential Scholarship offered only to a few, which is a scholarship that covers half of tuition and all dorm fees.



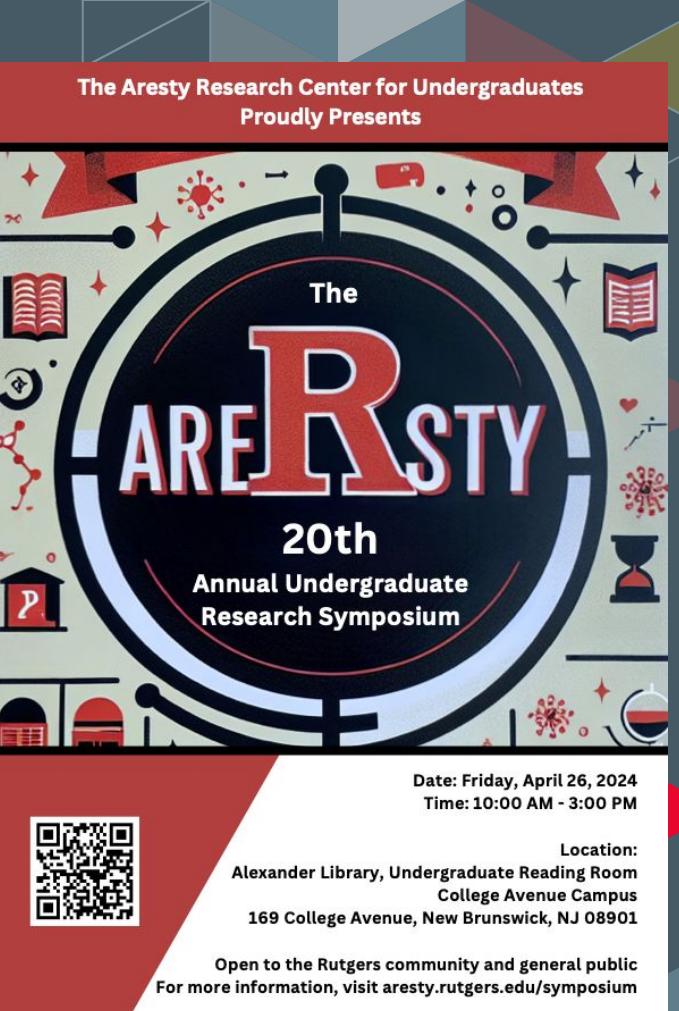
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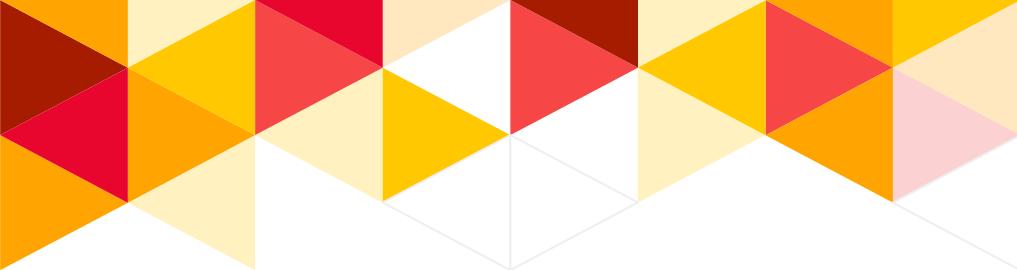


Olivia Drazek was accepted to join the Princeton Public Affairs Group as their 2024 remote intern.





- **Michael Joseph** earned the Eagleton Institute of Politics Scholarship for a summer internship in DC.
- Michael presented research at the Rutgers Writing Centers at the Undergraduate Research Writing Conference.
- Michael won his primary race became the Republican nominee for Bergen County Commissioner at 21 years old.



Harry Gavilanes was published as a co-author in the *Journal of Intelligent Manufacturing*.





A One Health Look Into the Impact of Wildfires

Sarah Levin

- **Sarah Levin** presented at the “PostGraduate Assembly in Anesthesiology 77th Annual Meeting” and the “New York State Pain Society Annual Meeting”.
- Sarah was awarded 2nd place at the New York State Pain Society Trainee Poster Competition .
- Sarah was published in the *One Health, Writing Heals and Inspires Journal, Volume 3*.



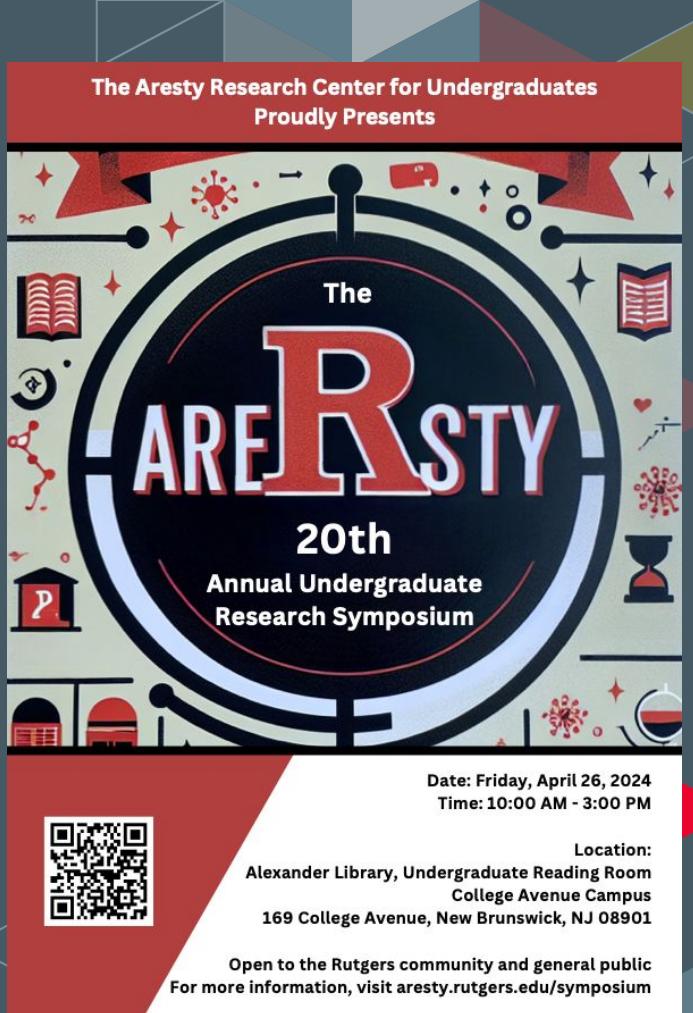
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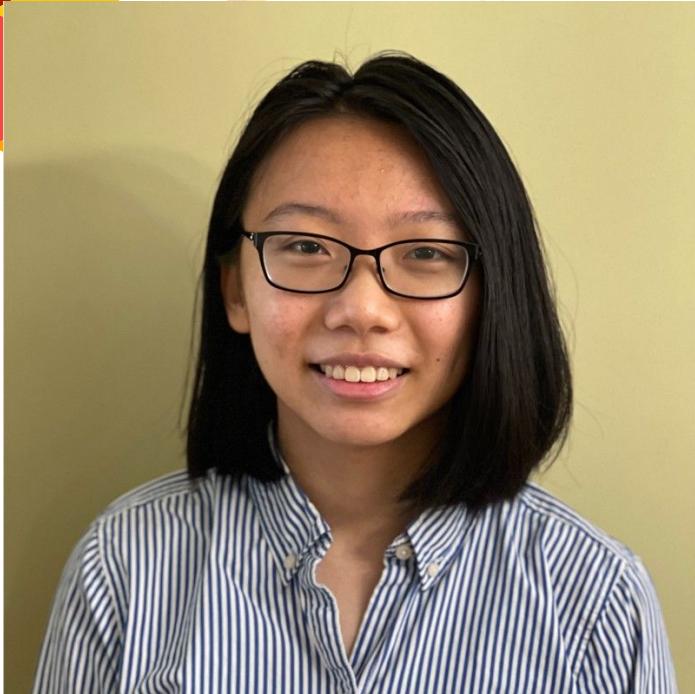
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Avni Bhavsar accepted a job at Deloitte.

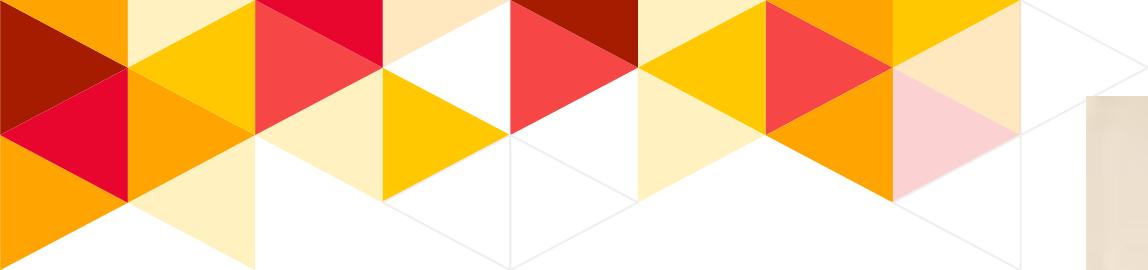
> “Aresty gave me my first professional opportunity in college and was a stepping stone towards all my accomplishments since. I have learned so much through my time with Aresty and am forever grateful.”





Kaelyn Chang was hired as an intern for Soterix Medical.

> “The research experience the Aresty program has given me has allowed me to get the internship I have today. The simulation and coding experience, along with the analytical and communication skills from this program helped me greatly through my application process for internships.”



Gavin Young was accepted into the 2024 Rutgers University Masters Program for Electrical Engineering.

Gavin was also accepted to return to Peraton Labs in Red Bank, NJ, and will be continuing work on their OSCAR project.





Daniel Gore was accepted into *Columbia University's* Electrical Engineering PhD program, where he will be working with Dr. Ken Shepard to develop electronic CMOS chips for biomedical implant applications.



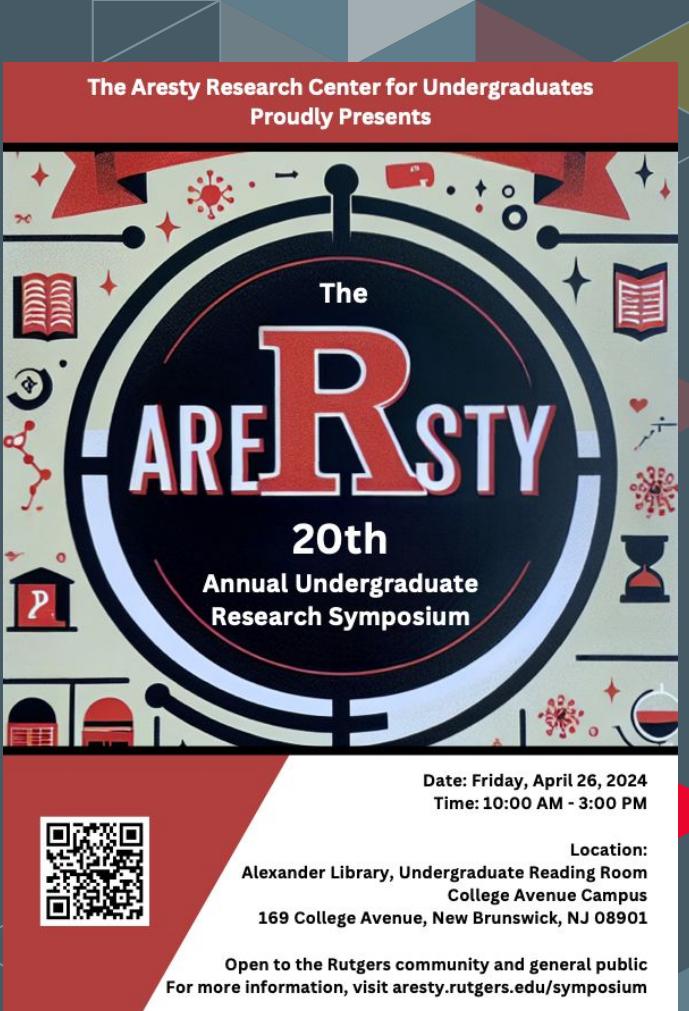
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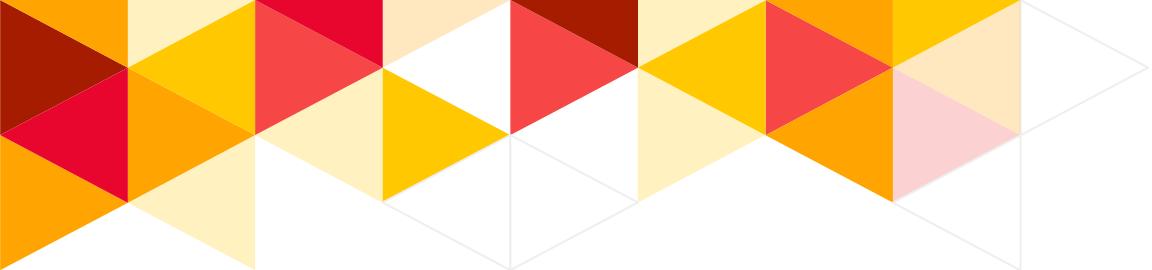
Siddharth Ghosh Roy

received a 2023 NIH summer undergraduate research award as a supplement to his mentor Sam Gu's grant.

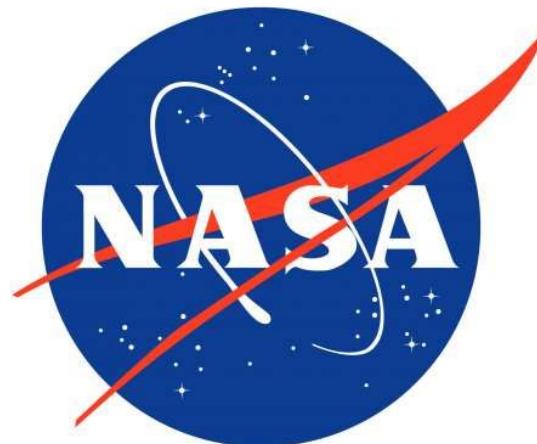




Moustafa Basiony was accepted to present a research poster at the Association for Psychology Science (APS) annual Convention in San Francisco, CA.



Jacen Nisbet has been selected to participate in the NASA New Jersey Space Grant Consortium Summer Internship during the Summer of 2024.





Zaina Merchant was inducted into the Chi Epsilon Honor Society for Civil Engineers. Zaina was also accepted to an internship program at Parsons Corporation as an Environmental Engineering intern for Summer 2024.



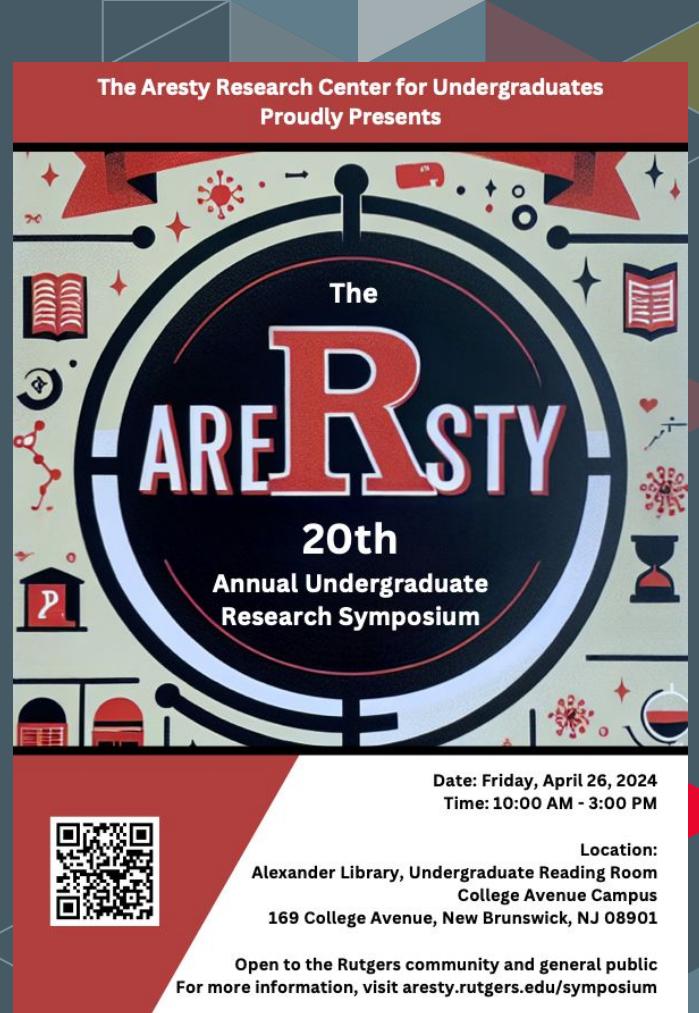
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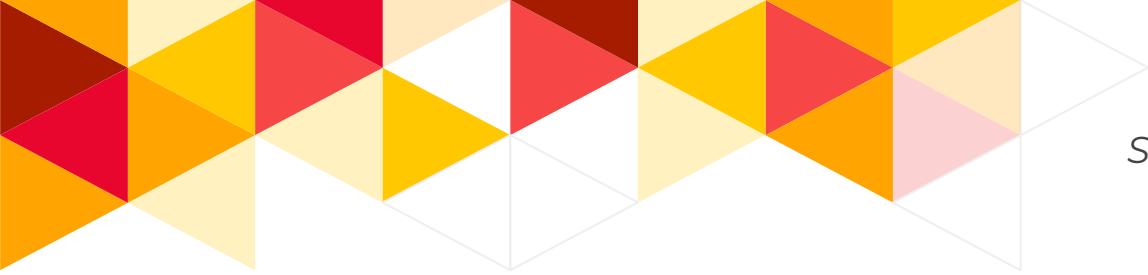
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Dr. Carolyn Moehling

*Senior Vice Provost and Vice Chancellor
for Undergraduate Education, and
Professor of Economics*

“Congratulations to all the student presenters! You have done impressive work! I hope you will continue to engage in research moving forward.

Thank you to the advisors, peer mentors, and Aresty team who have supported the students throughout their research experiences this year!”





ARESTY RUTGERS UNDERGRADUATE RESEARCH JOURNAL

The Publication Process



Scan the QR code to learn how to get involved or email aresty.rurj@rutgers.edu if you have any questions!



Engage and strengthen the undergraduate research community at Rutgers



Showcase the diversity and depth of interdisciplinary research at Rutgers

Aresty Community Service





Thank You!

Faculty Members

Postdoctoral Fellows

Graduate Students



Thank You!

Senior Peer Instructors:

Nia Mallangada

Daniel Gore

Omar Elmogazy

Zain Kamal

Durgha Natrajan



Thank You!

Peer Instructors

Beryl Zonese

Zachary McGee

Meryem Cicek

Saarim Rizavi

Gavin Young

Nikhil Shukla

Julianne Chan

Prabh Noori

Siddharth Ghosh Roy

Nicole Podlog

Anusha Puri

Akanksha Mathivanan

Diya Surray

Sarah Levin

Christopher Garofalo

Srinidhi Ayasomayajula

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