



What's new from our RNA community

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COVID-19 Testing Goes Crappy (and that's a good thing)

by: Charlotte Cialek, PhD candidate at Colorado State University

When Colorado desperately needed more COVID-19 testing, local professors readily stepped in to help. One of them is Dr. Carol Wilusz, head of the Cell and Molecular Biology program at Colorado State University (CSU).



Dr. Carol Wilusz, Personal Photo Collection

Back in March and April, CSU shut down research and encouraged self-isolation. With Carol's lab shut down, she recognized that if they began running clinical COVID tests, they had "the equipment to run about 1000 tests a day." Wanting to help, she began to ask around.

The Wilusz lab is now converted for COVID surveillance full-time. Carol's team, including CSU Engineering Department professor Dr. Susan DeLong, now monitors wastewater from 18 locations across the state twice weekly for COVID-19. State officials use the level of CoV-2 RNA in wastewater to monitor the spread of the disease and make informed decisions. Further, Carol's team is currently expanding their testing to include several locations across CSU's campus, especially targeting on-campus housing.

"As a molecular biologist myself", Carol says, "I was shocked that CoV-2 RNA can be recovered and measured from wastewater. Anyone who's worked with RNA knows how unstable it is. In my lab experiments, I have to use DEPC treated, RNase-free reagents and RNase Away to preserve RNA samples. So why isn't CoV-2 RNA degraded in the harsh environment of wastewater?"

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HIGHLIGHTED PUBLICATIONS

Biochemical Characterization of Yeast Xrn1
Chapman lab - University of Denver

Super Elongation Complex as a Targetable Dependency in Diffuse Midline Glioma
Vibhakar lab - CU Anschutz

The Sox2 transcription factor binds RNA
Rinn, Wuttke & Batey labs - CU Boulder

Spn links RNA-mediated endogenous retrovirus silencing and X chromosome inactivation Batey & Wuttke labs - CU Boulder

FMRP promotes RNA localization to neuronal projections through interactions between its RGG domain and G-quadruplex RNA sequences Taliaferro & Russ labs - CU Anschutz

An Extended Primer Grip of Picornavirus Polymerase Facilitates Sexual RNA Replication Mechanisms Peersen & Barton Labs - CSU Fort Collins & CU Anschutz

RNA is essential for PRC2 chromatin occupancy and function in human pluripotent stem cells Rinn & Cech Labs - CU Boulder

An alternative splicing program for mouse craniofacial development
Hooper & Williams labs - CU Anschutz

hnRNPK recognition of the B motif of Xist and other biological RNAs
Wuttke & Batey labs - CU Boulder

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The answer is still unclear, but Carol has a hunch. Total RNA levels varied between wastewater samples, likely due to varying levels of degradation. Interestingly, samples with nearly undetectable total RNA still reported strong levels of CoV-2 RNA. This suggests a highly protective role for the CoV-2 capsid.

Purifying RNA from wastewater comes with complications. Carol's protocol uses a specialized condenser, converting a large sample volume into a single test-tube worth. Further, RNA concentrations are measured with a digital droplet PCR machine, which is much more sensitive than conventional methods.

"I've been studying RNA my whole career, but I never thought I'd ever look for RNA in poo," Carol admits. Nevertheless, she is happy to use her expertise and specialized equipment to aid in the fight against COVID-19.

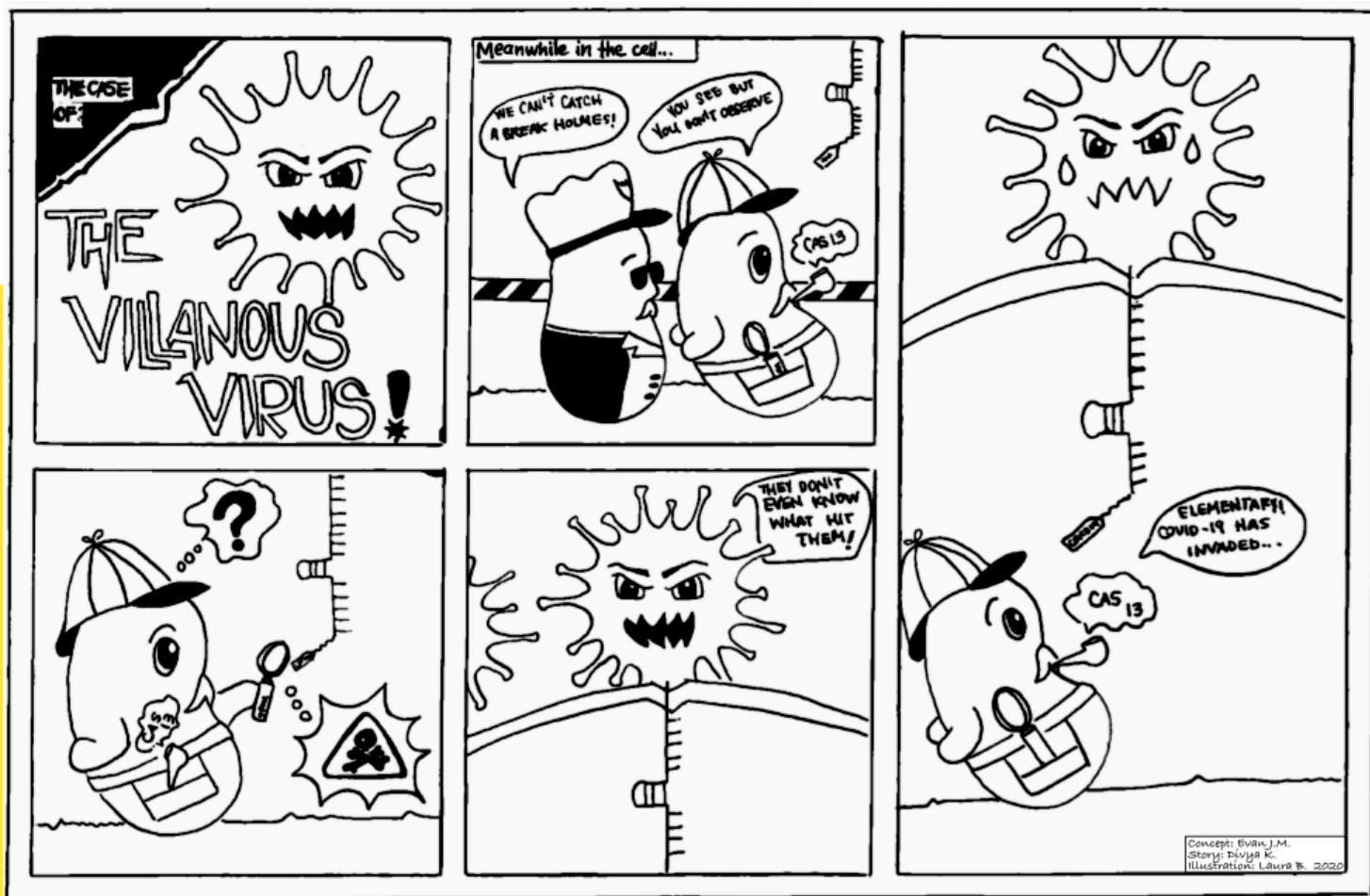
HIGHLIGHTED PUBLICATIONS

PREPRINTS

Live-cell imaging reveals the spatiotemporal organization of endogenous RNA polymerase II phosphorylation at a single gene
Stasevich lab - CSU Fort Collins

piRNAs prevent runaway amplification of siRNAs from ribosomal RNAs and histone mRNAs Montgomery Lab - CSU Fort Collins

Cyp33 Binds AU-Rich RNA Motifs via an Extended Interface that Competitively Disrupts the Gene Repressive Cyp33-MLL1 Interaction in vitro Wuttke Lab - CU Boulder



by: Evan J. Morrison (Concept), Divya Kolakada (Story) and Laura Baquero (Illustration) - University of Colorado - Anschutz

Seminar Series Strikes Back

by: Danielle Bilodeau, PhD candidate at University of Colorado - Anschutz

September 15th saw the return of the Colorado RNA Club's seminar series, formerly known as the "Evening with RNA". Although mingling over a catered dinner is no longer an option in these pandemic times, nearly 80 people from across the state logged in to the season's first event. Attendees heard from researchers at various career stages from CU Anschutz (Kelsey Nassar), CU Boulder (Tim-Michael Decker) and Colorado State University (O'Neil Wiggan). The organizing committee has already scheduled speakers for every 3rd Tuesday of the month from September to May, at 3pm.



Join us for our next event on October 20th! Presentations from: Frank Lee (National Jewish), Megan Cerny (CU Denver) and Conner Langeberg (CU Anschutz)



And save the date for the following event on November 17th! Presentations from: Dick Davis (CU Anschutz), Traci Lyons (CU Anschutz) and Charlotte Cialek (Colorado State University)

Calendar invites are sent out over the rna-club's listserv and if you're not already on the list you can reach us at ColoradoRNAClub@gmail.com to be added on.

MARK YOUR CALENDARS!

by: Giovana Breda Veronezi, PhD student at University of Colorado - Anschutz



MORE CO RNA CLUB EVENTS

Undergraduate Outreach Event

October 20th, 2020

"For Undergraduate Outreach Event, students will have the opportunity to ask questions to a panel of local graduate school program directors, admissions officers, and current graduate students about the graduate school application process. Participants will learn more about each program and also learn general strategies to improve their graduate school applications. As an added bonus, students who come may waive some of their graduate school application fees! To find out more, please email me at tim.stasevich@colostate.edu. We hope to see you there!" - Dr. Tim Stasevich (CSU Fort Collins)

Industry Networking Event

TBD

In the Industry networking event, you can hear from scientists from local and national companies

about their priorities in Research and Development. Also, bring your questions about applying for industry positions to a panel discussion about the topic. This event is planned for Spring 2021, stay tuned for more information!

RNA-RESEARCH TALKS

BioFrontiers Speaker Series

- **Dr. Cole Trapnell (University of Washington)**
October 13, 2020 2:30-3:30pm

For more information, visit <https://www.colorado.edu/biofrontiers/events>

CU Boulder MCDB Thursday Seminar

- **Dr. Roy Parker (CU Boulder)**
October 8, 2020 4:00-5:00pm
Host: Dr. Shelley Copley
- **Dr. John Rinn (CU Boulder)**
November 12, 2020 4:00pm-5:00pm
Host: Dr. Robert Garcea

Contact mcdm-info@colorado.edu for Zoom information



For announcements of recent RNA-relevant publications, job openings, events or awards from your lab, e-mail us at ColoradoRNAClub@gmail.com

Organizing committee: Ankita Arora, Danielle Bilodeau, Divya Kolakada, Giovana Breda Veronezi, Laura Baquero (CU Anschutz); Charlotte Cialek (CSU Fort Collins); Giulia Corbet, Soraya Shehata (CU Boulder).
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