



SEPTEMBER 2025 NEWSLETTER

Greetings, PCMM –

We hope all attendees enjoyed the PCMM retreat and the accompanying good weather, and had a chance to discuss their research and connect to new people. Thanks to everyone for helping to make this retreat a successful one! Also, thanks to Xin Liu for the excellent group photo (below)!

As always, if you have any suggestions for the newsletter, please reach out to Vera Gaun at vera.gaun@childrens.harvard.edu

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PCMM Scientific Retreat 2025

Congratulations to the Award Winners!



Poster award winners left to right: Bryan Zúñiga, Hsuan-Lei Sung, Ayijiang Yisimayi, Yuanyou Wang, Vinayak Sadasivam Tumuluri, John Kuriyan (Chair, PCMM SAB), Sergei Rudnizky, Luo Chen Liu, Xiang Li, Jing Li, Sam Leitaó.

We thank the Scientific Advisory Board members for judging the posters — the winners were selected based *both* on science *and* presentation. Here are the winning posters and all the involved contributors:

Sam Leitaó (Wong Lab)

Single-Molecule Mechano-Proteomics with DNA Nanoswitch Caliper Trains (DNCTs)

Samuel Leitaó, Andrew Ward, Stella Wang, William Shih, and Wesley P. Wong

Jing Li (Springer Lab)

Ligand binding initiates single-molecule integrin conformational activation

Jing Li, Myung Hyun Jo, Jiabin Yan, Taylor Hall, Joon Lee, Uriel López-Sánchez, Sophia Yan, Taekjip Ha, and Timothy A. Springer

Xiang Li (Alt Lab)

Linear RAG Scanning Mediates Editing of Igk Variable Region Repertoires

Xiang Li, Yiwen Zhang, Hongli Hu, Tammie Zhu, Xin Lin, Duane Wesemann, Adam Ye, and Frederick Alt

Luo Chen Liu (Wu Lab)

Regulated condensate formation governs pyrin inflammasome assembly and signaling

Luo Chen Liu, Nilimesh Das, Tapas Paul, Wonyong Lee, Audrey Lessing, Daniel Kastner, Sua Myong, and Hao Wu

Yiqiong Liu (Zhang Lab)

Setd1a controls brain-wide schizophrenia-related phenotypes and their reversal via histone methylation

Yiqiong Liu, Guoguang Xie, Shan Jiang, Chengjie Zhou, Qianying Yang, and Yi Zhang

Sergei Rudnizky (Ha Lab)

Dynamic CTCF conformations control cohesin barrier function

Sergei Rudnizky, Peter Murray, Emily Sorensen, Theo Koenig, Raquel Merino-Urteaga, Sushil Pangeni, Hermani Chhabra, Iain Davidson, Laura Caccianini, Paul Meneses, Manuel Osorio Valeriano, Paul Hook, Jasmin Zarb, Jingzhou Hao, Winston Timp, Lucas Farnung, Seychelle Vos, Aleksei Aksimentiev, Jan-Michael Peters, and Taekjip Ha

Vinayak Sadasivam Tumuluri (Hur Lab)

Revisiting the Paradigm of Type I Interferon Signaling: Structural and Functional Dissection of STAT and IRF Transcriptional Complexes

Vinayak Sadasivam Tumuluri and Sun Hur

Congratulations to the Award Winners!

Yuanyou Wang (Moffitt Lab)

Mapping the Spatial Organization of the Microbiome-Host Interface in a Model Microbial Community

Yuanyou Wang, Nana Twumasi-Ankrah, and Jeffrey R. Moffitt

Ayijiang Yisimayi (Lieberman Lab)

Disrupting Mismatch Repair Converts Immunologically Cold Tumors into Immunogenic Ones, Suppresses Tumor Growth, and Protects Against Unrelated Cancers

Haiwei Zhang, Ayijiang Yisimayi, Mercedes Lewandrowski, Bowen Gu, Kaimin Guo, Xiyu Ma, Juan Velazquez Matos, and Judy Lieberman

Xincheng Yuan, Hsuan-Lei Sung (presenting) (Myong Lab)

Mechanistic Insights into FUS Nucleolar Dynamics under Transcriptional Stress

Xincheng Yuan, Hsuan-Lei Sung, Chun-Ying Lee, Nathalie Djaja, Gemechu Mekonnen, and Sua Myong

Bryan Zúñiga (Kirchhausen Lab)

Cell Entry of Adeno-associated Virus 2

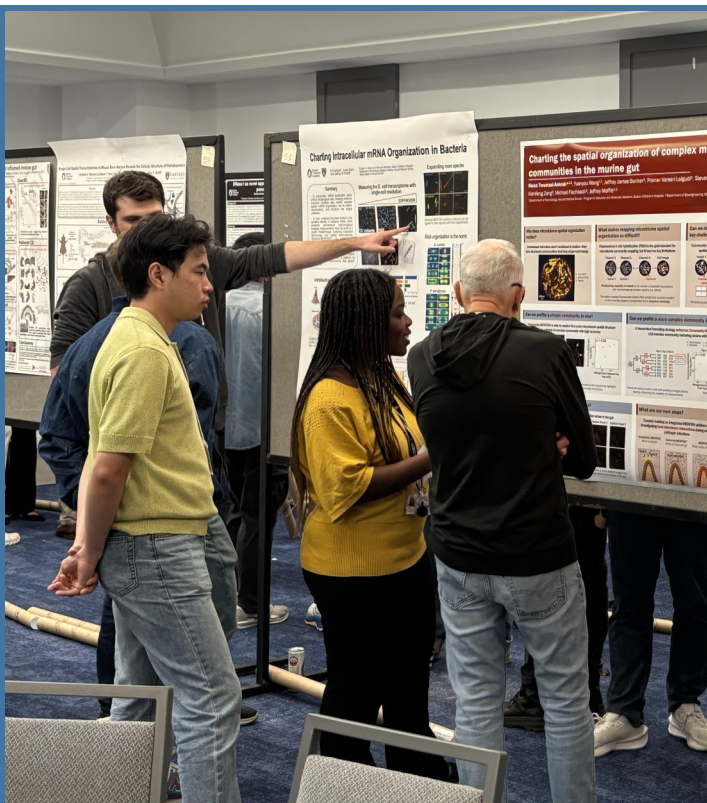
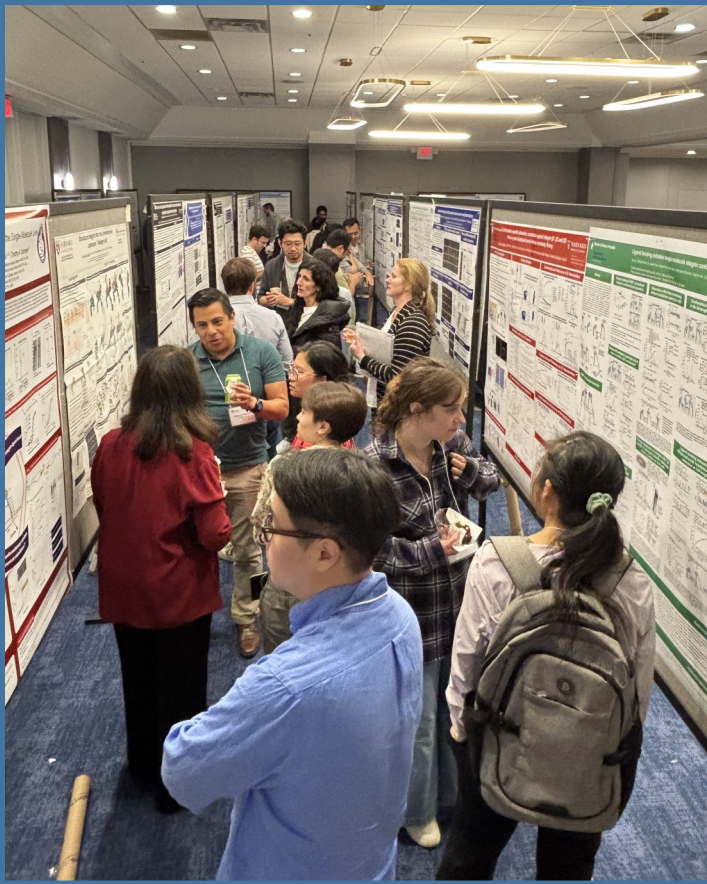
Bryan Zúñiga, Stephen C. Harrison, and Tom Kirchhausen

Additionally, congratulations to Tiffany Hsu, a post-doctoral fellow from Sun Hur's laboratory, for winning the inaugural Jeffrey, Vicki, and Fred Modell Lecture Award! The award competition results were very close, reflecting the high-caliber science and researchers at PCMM. As part of the award ceremony, Tiffany gave a lecture on her new research insights on the pathogenesis of anti-MDA-5 dermatomyositis, a severe type of inflammatory disease, and potential new opportunities for biomarkers and targeted therapy.



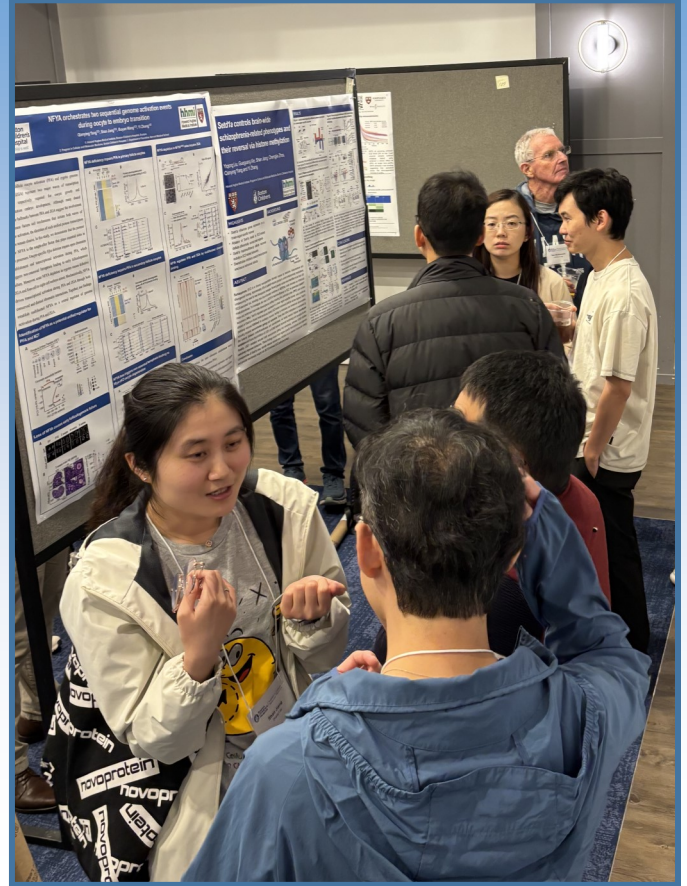
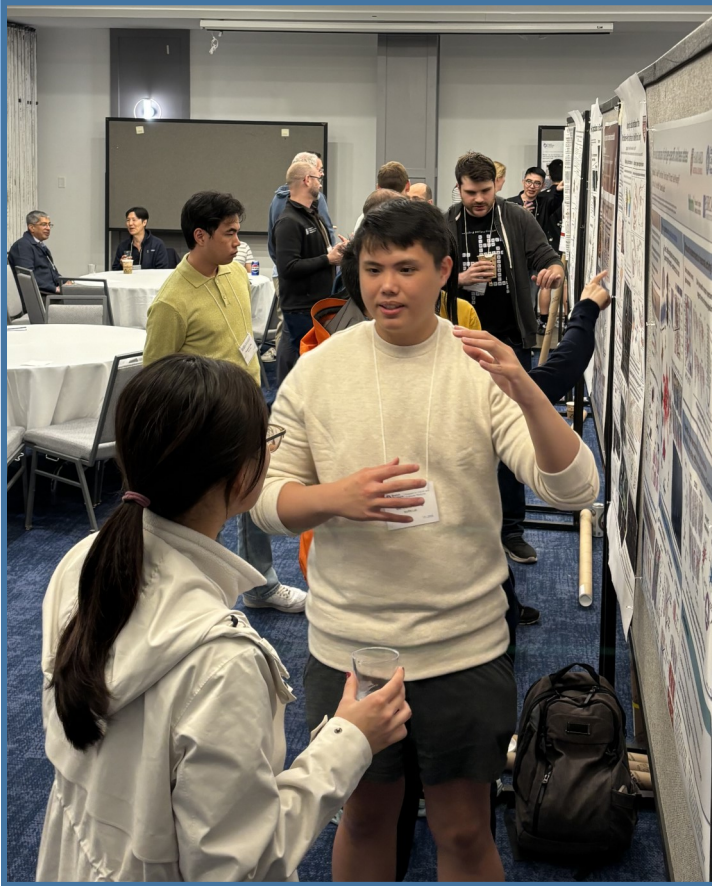
Dr. John Kuriyan, the Chair of the SAB, presenting Tiffany Hsu with the Jeffrey, Vicki, and Fred Modell Lecture Award.

PCMM Retreat Snapshots



Photos: courtesy of Steve Carriuolo (PCMM Administration)

PCMM Retreat Snapshots



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PCMM Retreat Snapshots



Top 2 photos: courtesy of
Yumi Uetake (Alt Lab)



Middle and bottom photos:
courtesy of Jenny Zhou (Alt Lab)



Introductions: Alex Stuart of the Li Lab



Photo: courtesy of Alex Stuart

Tell us about your role here at PCMM.

I am a new Postdoc in [Julia Li's lab](#), looking to help unravel the mysteries of EBNA1 binding!

Where were you before HMS?

I was a PhD student at Rockefeller University in the lab of Titia de Lange. My thesis delved into the molecular mechanisms driving replicative senescence (and why low oxygen extends replicative lifespan).

What's your favorite piece of lab equipment?

I like the vortexer, because that name is objectively pretty silly.

What is the best piece of advice you've ever received?

Don't be afraid to ask a simple question.

What made you pursue a career in science?

I liked the feeling that there's a bunch of puzzle pieces out there, and it's your job to put them together and find an answer. I also really loved David Attenborough documentaries.

What are your research interests?

The DNA damage response, mechanisms

that extend the natural proliferative potential of cells, and how cell programming changes in the presence of successful viral infections.

If you could solve one scientific or medical mystery, what would it be and why?

I would like to know how common replicative senescence is in human beings, because right now it's unclear how often cells *in vivo* hit their replicative limit and we don't have good ways of differentiating initiators of senescence. I would also love to know the length that a telomere becomes "too short" and gets recognized as DNA Damage – a very long-standing question in the telomere field, and a very complicated question to tackle.

If you had unlimited funds, what kind of research would you conduct?

Come back to me on this one! Too many ideas.

What recent scientific breakthrough is most exciting to you?

The finding that thymidine can meaningfully increase telomerase activity, from the lab of Dr. Suneet Agarwal. It may actually, genuinely save the lives of people with short telomere biology disorders, and the science around it is beautiful.

If you were a molecule or a protein what kind would you be and why?

Maybe Rap1 in the shelterin complex; I like to hang around with a crew, but not necessarily be the center of attention.

What profession would you choose if you weren't a scientist?

A fiction writer.

Introductions (continued)

What are your hobbies outside the lab?

I like to write, exercise, and enjoy the local techno/house music scenes.

What kind of music and/or podcasts do you like?

Really depends on the day! Lately I've been enjoying A.G. Cook's Britpop album.

What is your favorite book or a book you've really enjoyed recently?

My favorite books are Invisible Cities by Italo Calvino or House of Leaves by Mark Z. Danielewski.

Do you have any pets?

I hang out a lot with my parents' dog Ollie,

a 130 lb Bernese Mountain Dog.

What's your favorite place in the world?

Wilmington, Vermont.

What are you looking forward to discover in the Boston area?

How the music scene has changed since I was last here! I grew up in the area and was a research tech at Harvard before my PhD, so it's fun to re-discover old spots and newly-discover the new ones!

Do you have any secret talents?

I'm really good at quickly catching the things I just knocked off the table. Reflexes like [that of] a clumsy cat.

PCMM Researcher Wins a Prestigious Fellowship



[Stephanie Gu, PhD](#), ([Myong](#) and [Ha Laboratory](#)) has been awarded an [NIH F32 Ruth L. Kirschstein Postdoctoral Individual National Research Service Award](#). Polyamines are small charged molecules that are ubiquitous throughout the cell and affect DNA accessibility by proteins. Stephanie is investigating how polyamines can affect the structure, dynamics, and flexibility of DNA. Specifically, she will study the mechanism by which polyamines promote homology-directed repair mediated by RAD51 and how polyamines can influence the propensity for DNA to adopt alternative structures and conformations. Overall, her work seeks to uncover how a family of small polycations can impact genomic damage susceptibility and its subsequent repair, with implications across various diseases including cancers and neurodegenerative disease.

PCMM Faculty News



[Jeffrey Moffitt, PhD](#), has been promoted to Associate Professor of Microbiology as of September 1, 2025.

PCMM Director Taekjip Ha, PhD, comments: “Jeff has been an exemplary member of PCMM, excelling in research, training, and service. His postdoctoral fellow, Dr. Paulo Cadinu, received the prestigious Jeffrey Modell Award from PCMM—an honor awarded to only one out of more than 100 postdoctoral fellows each year. Paulo also published two first-author papers, including a 2024 [Cell article](#) that introduced a groundbreaking framework for understanding inflammatory bowel disease, potentially leading to new types of interventions. An-

other postdoctoral fellow, Dr. Yuanyou Wang, and a graduate student in his lab, Ari Sarfatis, were the first co-authors of a 2025 [Science paper](#) that revealed how bacteria activate specific genes in various conditions and spatial environments.

Jeff serves as co-chair of our monthly seminar series alongside Hao [Wu]. He also initiated and leads with Sua [Myong] the PCMM trainee seminar series, which convenes monthly. Now in its third season, the trainee seminar consistently attracts over 70 PCMM graduate students and postdoctoral fellows.”