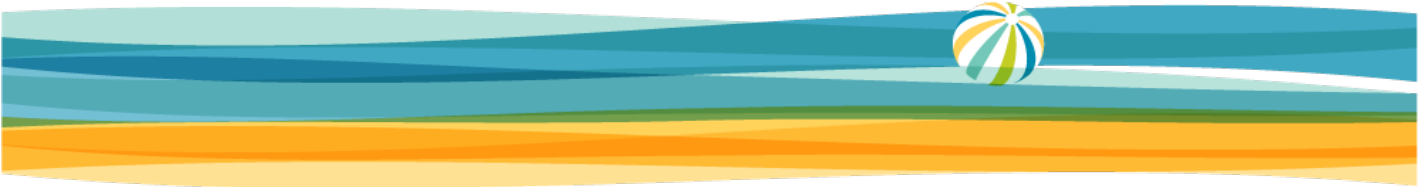


UCLA  
Molecular, Cell and Developmental  
Biology

*Annual Research Conference*

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Annenberg Community Beach House, Santa Monica, CA  
January 13-14, 2023



## **Annenberg Community Beach House**

415 Pacific Coast Highway \*  
Santa Monica, CA, 90402  
Phone: 310-458-4904

\*Important: In some navigational systems the address may appear as 415 Palisades Beach Road, Santa Monica, CA.

### Directions

<https://www.annenbergbeachhouse.com/visit-us/getting-here-and-parking.aspx>

The Annenberg Community Beach House is only 25 minutes mostly freeway miles from UCLA.

#### From Los Angeles

Take the 10 West, which will become Pacific Coast Highway when it reaches the beach. At the second traffic light, Beach House Way, turn left into the parking lot.

#### From Malibu

Take Pacific Coast Highway south. Turn right at Beach House Way, into the parking lot.

#### From Santa Monica (downtown)

Head west towards Ocean Ave. Turn left at Ocean Ave. Turn right at Moomat Ahiko Way (after Colorado/the pier entrance) which will have signs for Pacific Coast Highway. Turn left at Beach House Way into our parking lot.

### Parking

Parking at the Annenberg will be paid for by the Department. We strongly recommend you leave campus early in order to find a parking space since it is available on a first come, first served basis. When you arrive, please check-in at our event registration table to receive your parking permit.

### Weather and Driving Conditions/Traffic

You may check driving conditions through the following:

California Department of Transportation: <http://www.dot.ca.gov/cgi-bin/roads.cgi>

Phone: (800) 427-7623 (Enter the number of the highway (18 or 173) then enter pound sign (#)

Sigalert: <http://www.sigalert.com/map.asp?Region=Greater+Los+AngelesMiscellaneous>

### Additional Details

Please have lunch prior to your arrival to Annenberg Community Beach House on Friday. Boxed Lunch will be provided on Saturday.

It is the policy of the Annenberg Community Beach House that guest may not bring their own food for meals, meetings and socials. Full service is provided by onsite catering.

The Annenberg Community Beach House has adopted a smoke-free environment policy in all buildings including meeting rooms and social rooms.

We strongly encourage the use of masks throughout the retreat for the safety of all participants. Masks will be available at the registration desk.

Friday start time: 1:00 PM                      end time: 10:00 PM  
Saturday start time: 8:00 AM                      end time: 3:30 PM

Meal times:

Friday Dinner at 6:00 PM  
Saturday Breakfast at 8:00 AM  
Saturday Lunch at 12:00 Noon

Our conference meeting will take place in Garden Terrace Room. Our poster session will take place in Sand & Sea Room + View Deck.

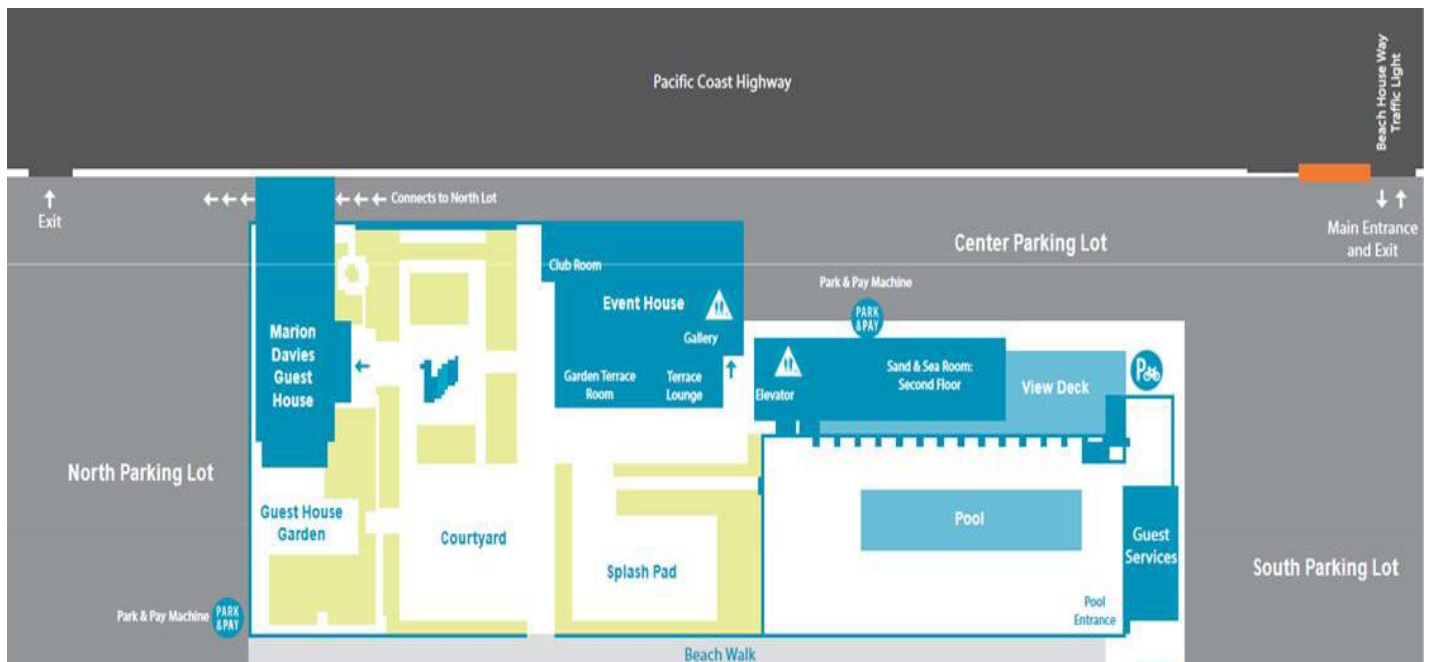
Talk Sessions in Garden Terrace Room

Before the meal or break time prior to your talk session, check that the latest version of your talk is properly loaded onto the designated presentation laptop.

Talks must be kept within the allocated time (20 minutes): 15 minutes for talk and 5 minutes for questions.

Poster Session in Sand & Sea Room.

Poster session will be held on Friday night after the research presentations.



### Sponsorship Recognition

A special thank you to Zymo and Bob Goldberg for your generous sponsorship.

## MCDB RESEARCH CONFERENCE PROGRAM

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### Friday, January 13

1:10 PM Opening Remarks by Jeff Long, Chair of MCDB

*Moderator: Jeff Long*

1:20-1:40 PM Braybrook Lab  
Braybrook entire lab  
What do walls have to do with it? Project Overview from Our Lab

1:40-2:00 PM Shah Lab  
Pavak Shah  
Quantitative Embryology: Identifying Links Between Cell Fate and the Cell Cycle Using Graph Theory

2:00-2:20 PM Goldstein Lab  
Jenna Giafaglione  
Reciprocal regulation of metabolism and prostate epithelial lineage identity

2:20-2:40 PM Farmer Lab  
D'Juan Farmer  
Resolving mechanisms of growth control at cranial sutures

2:40-3:00 PM Johnson Lab  
Christopher Avalos  
Mutations in the stress granule protein Pbp1 promote survival during splicing Inhibition

3:00-3:20 PM Break

*Moderator: Alvaro Sagasti*

3:20-3:40 PM Lyons Lab  
Weiguang Wang  
Targeting the BMP/TGFbeta signaling balance in articular cartilage maintenance and osteoarthritis therapy

3:40-4:00 PM Mikkola Lab  
Anastasia Vavilina-Halstead  
Two distinct isoforms of MLLT3 balance human HSC fate decisions

4:00-4:20 PM Deb Lab  
Arjun Deb  
A humanized monoclonal antibody for the treatment of heart disease

4:20-4:40 PM Banerjee Lab  
Utpal Banerjee  
Signaling control of G2 phase links cell cycle with differentiation in hematopoiesis

4:40-5:00 PM Break

*Moderator: Jeff Long*

5:00-6:00 PM Amjad Askary  
Spatial profiling of gene expression and signaling history of the cells: why? and how?

6:00-7:30 PM Dinner

7:30-10:00 PM Poster Session

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## **Saturday, January 14**

8:00-9:00 AM Continental Breakfast

*Moderator: Jeff Long*

9:00-9:20 AM Cohn Lab  
Dan Cohn  
TRPV4 skeletal disorders: Preclinical mouse model and treatment

9:20-9:40 AM Carrie Spratford  
Adapting Course-based Undergraduate Research Experiences to the Virtual World

9:40-10:00 AM Jacobsen Lab  
Brandon A. Boone  
Understanding the roles of heat shock proteins in DNA methylation mediated gene silencing

10:20-10:40 AM Break

*Moderator: D'Juan Farmer*

10:40-11:00 AM Lowry Lab  
Carlos Galvan  
Defining metabolic flexibility in hair follicle stem cell induced squamous cell carcinoma

11:00-11:20 AM Clark Lab  
Auriana Arabpour and Nicole Agranonik  
Novel Self-Instructing System Generates Human Primordial Germ Cell-like Cells From Pluripotent Stem Cells

11:20-11:40 AM Pellegrini Lab  
Lajoyce Mboning  
Development of robust maximum likelihood algorithms for estimating epigenetic age

11:40-12:00 PM      Coller Lab  
Laurent Voisin  
Role of autophagy in melanoma growth

12:00-1:00 PM      Lunch

*Moderator: Hilary Coller*

1:20-1:40 PM      Sagasti Lab  
Kaitlin Ching  
How is axon caliber determined locally?

1:40-2:00 PM      Sears Lab  
Karen Sears  
Development, Aging, and Evolution in Mammals

2:00-2:20 PM      Hartenstein Lab  
Volker Hartenstein  
Towards a ground plan of lineage associated fiber systems in the insect brain

2:20-2:40 PM      Nakano Lab  
Austin Nakano  
Metabolic regulation of cardiogenesis

2:40-3:30 PM      Awards Presentation / Closing Remarks

3:30 PM              Retreat Adjourn

## POSTERS

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### Askary Lab

Kai Hao, Yuka McGrath, Amjad Askary  
Imaging based profiling of cellular signaling intensity

### Braybrook Lab

Lauren K. Dedow, Emily, Oren, Catherine Sutarjo, Firas Bou DAher, and Siobhan Braybrook  
Dark-grown Hypocotyls and the Acid Growth Theory: Hot or Not?"

Steven Beuder, Claire Latendresse, Grace Donnelly, Siobhan Braybrook  
Climate change and gene editing in Giant Kelp

### Chen Lab

Adam D. Langenbacher, Fei Lu, Haruko Nakano, Benjamin Keer, Vincent Ren, Yibin Wang, Chen Gao, Atsushi Nakano, and Jau-Nian Chen  
Rtf1-mediated Transcriptional Regulation of Cardiac Development and Function

Lauren Crisman, Andrew Liang, Hirohito Shimizu, Jau-Nian Chen  
VDAC2 Maintains Cardiac Rhythmicity and Regulates Ventricular Wall Morphogenesis

### Clark Lab

Agranonik, N., Arabpour, A., Jacobson, E., Esfahani, SN., Zheng, Y., Jianping, F., Clark, AT  
Novel Self-Instructing System Generates Human Primordial Germ Cell-like Cells From Pluripotent Stem Cells

DiRusso, J., Wang, A., Xiang, X., Tao, Y., Robbins, A., Lui W., Clark, AT.  
Trim28-Mediated Repression Of Endogenous Retroviruses Safeguards Primordial Germ Cell Differentiation

Mary Jasmine Lara, Enrique Sosa, Amander Clark  
Sex Determination in the Rhesus Macaque

Robbins, A., DiRusso, JA., Wang, A., Clark, AT.  
Exploring a role for miRNA processors in Embryonic Germline Development

Qiu Ya Wu, Youngsun Hwang, Fei-man Hsu, Nicole Agranonik, Auriana Arabpour, Amander T. Clark  
Generating a reporter line to examine TET1's role in early embryogenesis

### Coller Lab

Kaiser Atai, Mithun Mitra, Kenya Bonitto, Alex Dunkwu, Adriana Covalan, Hilary Coller  
Cross-talk between H4K20me3 and CTCF influences chromatin architecture in cellular quiescence

### Goldstein Lab

Matthew Bernard, Jenna Giafaglione, Preston Crowell, Takao Hashimoto, Jazmin Michel-Mondragon, Rachel Dove, Andrew Goldstein  
Assessing the role of tricarboxylic acid cycle rewiring on anti-androgen resistant prostate cancer

### Jacobsen Lab

Jason Gardiner, Colette Picard, Yan Xue; Zheng Li, Charlotte Jacobs; Alex Quan; Clare Connally; Sophia Kira-Lucas, Isabelle Trentchev, Cassidy Jacobsen, Steven E. Jacobsen  
Active removal of DNA methylation through the establishment of TET1 and TDG cotargeting in plants.

Shuya Wang, Ming Wang, Brandon Boone, Ranjith Papareddy, Lucia Ichino, Jason Gardiner, Suhua Feng, Steven Jacobsen  
Exploring Transcriptional Silencing Mechanism of MBD2 in Arabidopsis

### Johnson Lab

Nidhi Kumari and Tracy Johnson

Phosphorylation of the splicing factor Prp45 and its affect on gene expression

### Long Lab

Melissa Kosty, Michael Hannon, and Jeff A Long

Mutations in POLAR BEAR, a Serine Carboxypeptidase-like Protein, Enhance the Embryonic Defects of topless-1

### Mikkola Lab

Julia Aguadé-Gorgorió, Yasaman Jami-alahmadi, Maya Kardouh, Iman Fares, Vincenzo Calvanese, Haley Johnson, Valerie Rezek, Mattias Magnusson, Juliana Shin, Karina Nance, Helen Goodridge, James Wohlschlegel, Hanna Mikkola

The endosomal adaptor protein MYCT1 controls environmental sensing in human HSCs

### Nakano Lab

Haruko Nakano, Cesar A Perez-Ramirez, Naofumi Kawahira, Jennifer Thompson, Kellie Cho, Richard Law, Feiyang Ma, Matteo Pellegrini, Jun Park, Heather Christofk, Atsushi Nakano

Comprehensive metabolomics analysis revealed mitochondrial dysfunction in embryonic cardiomyocytes in diabetic pregnancy

Naofumi Kawahira, Haruko Nakano, Atsushi Nakano

3D geometry of muscle fiber orientation field during heart morphogenesis

### Pellegrini Lab

Fei-Man Hsu, Harry C. Pickering, Elaine F. Reed, Matteo Pellegrini

DNA methylation dynamics through COVID-19 progression

Jonathan Perrie, Rosane Teles, Robert Modlin, Matteo Pellegrini

Spots and Single Cell: Using Morphological Markers to Improve Accuracy

Prashansa Ratan, Liudmilla Rubbi, Michael Thompson, Kaushik Naresh, Joena Waddell, Barbara Jones, Matteo Pellegrini

Epigenetic Aging in Cows is accelerated by Milk Production

### Sagasti Lab

Evan Takayoshi, Yasuko Inaba, Aaron van Loon, Alvaro Sagasti

Plakin Cytolinkers: Coordinators of Microridge Morphogenesis

Khaled Nassman, Melissa Emami, Alvaro Sagasti

Transepithelial migratory cells in the zebrafish epidermis may regulate epithelial cell properties

### Sears Lab

Aidan Howenstine, Karen Sears

Investigating the role of gene network architecture in the generation of phenotypic variation