




UCLA

Molecular Biology Institute

ANNUAL REPORT

2021-2022

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MOLECULAR BIOLOGY INSTITUTE

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MBI Director's Report

Dear Colleagues,

This past year, the MBI has sought to help the members of our research community to reconnect as we work to normalize our lives while continuing to maintain practices that minimize the coronavirus pandemic. I appreciate the efforts of our leaders who have sought to protect our safety while allowing us to continue our research and education missions.

We are proud of the accomplishments of the MBI faculty in the past year. Professor Leonid Kruglyak was elected to the American Academy of Arts and Sciences. Professor Joseph Loo was named a fellow of the American Association for the Advancement of Science. Professor Tamir Gonen received the 2022 A. L. Patterson award from the American Crystallographic Association. We congratulate Professor Hanna Mikkola for her research tracing blood stem cell development, Professor Samantha Butler for creating sensory neurons from stem cells, and Professor David Eisenberg for his publication identifying the protein TMEM106B in fibrils in the brains of individuals with neurodegenerative disorders, Professor Ming Guo on her laboratory's findings about the role of proteins that control mitochondrial fission in Parkinson's disease, and Professor Arjun Deb's discovery of a new protein involved in heart repair.

The MBI Thursday Seminar Series which has been co-chaired in the last year by Keriann Backus, Alvaro Sagasti, Tom Vallim, Jose Rodriguez and Elizabeth Tarling brought outstanding scientists to our community including Titia de Lange, Catriona Jamieson, Danelle Devenport, Jurgen Knoblich, Beronda Montgomery, Manu Platt, and Nadya Dimitrova. These weekly seminars continue to provide an important focal point for our discussions of the latest developments in the area of molecular biology throughout the world. We thank the Seminar Series chairs and the entire seminar committee for their contributions. Thank you to the faculty who hosted speakers. I am also grateful to Helen Houldsworth and Nadia Avila for their stewardship of the series.

The student-organized MBI Retreat, with Keynote speaker Natalie Jura, was a terrific opportunity for the MBI community to come together and discuss exciting research in our laboratories. The career panels provided valuable insights into the variety of career paths taken by program alumni with Ph.D.'s in molecular biology. The students had an opportunity to connect with games and trivia.

In the past year, we welcomed a new Home Area Director for the Molecular Biology Interdepartmental Program. Professor Thomas Vallim is now Home Area Director for the Gene Regulation, Epigenomics and Transcriptomics Home Area. We thank Mike Carey for all of his work as the Home Area Director and his stewardship of the program. I am grateful to Tom, Elissa Hallem, Alvaro Sagasti, and Feng Guo for all of their efforts to ensure the students in the MB-IDP have the best possible training experience. I also appreciate the efforts of First Year Curriculum Coordinators, Professors Kathrin Plath and April Pyle. As a team, we have been evaluating and revising our curriculum including adding a new quantitative class that is providing our students with skills in computer programming and statistics that will be valuable for them throughout their Ph.D.

During the 2021-2022 academic year, our program included 170 graduate students. 16 students completed their doctoral training. Many of our students have been recognized with internal and external fellowships and training grants. Our students have been active participants at national and international conferences.

Our students are our legacy and we are fully committed to improving their training and research experience. We are also eager to stay connected with our alumni, and the community of donors and friends. This year, the MBI hosted a reception to honor former MBI Director Arnie Berk.

Through the generosity of Audree Fowler, the MBI was able to award five Audree Fowler Fellowships in Protein Science to Weixian Deng (Wohlschlegel and Plath Labs), Sean Jiang (Eisenberg Lab), Maria Flores (Rodriguez Lab), Carter Lantz (Loo Lab), and Logan Richards (Rodriguez Lab). We were delighted to hear these outstanding students present their exciting research at the awards ceremony. The Parvin-Boyer post-doctoral recognition awards have continued to provide recognition to our outstanding body of post-doctoral trainees. The 2021-2022 recipients are Yolanda Markaki (Plath lab), Beibei Wu (Gwack lab), and Xian Xia (Zhou lab). The recipients gave excellent presentations in which they shared their exciting research with our community.

The Amgen Talks Biotech Pilot Program was very well-received and provided an opportunity for students and postdoctoral fellows to gain a greater appreciation of the workings of a successful biotechnology company.

Thank you for your commitment to our community.

I look forward to seeing you at our events, symposia, and seminars!

Hilary Collier
Professor
MBI Director

MBI COMMITTEES

Thank you to the following people for their service on MBI committees during the 2021-2022 academic year:

Advisory Committee

Amander Clark, Catherine Clarke, Alexander Hoffmann, Siavash Kurdistan, Todd Yeates, Rachelle Crosbie-Watson and Jerome Zack

Membership Committee

Megan McEvoy (Chair), Reza Ardehali, Alice Soragni, Alison Frand

Thursday Seminar Series Planning Committee

Jose Rodriguez and Elizabeth Tarling (Co-Chairs), Douglas Black, Hilary Coller, Michael Teitell, Arjun Deb, Atsushi Nakano, Jie Zheng, Yibin Wang, Lin Jiang, Chao Peng, Ye Zhang, Valentia Alonso, Alberto Vazquez, Haripriya Vaidehi Narayanan., and Benancio Rodriguez.

Sigman Award Selection Committee

Catherine Clarke (Chair), James Wohlschlegel, Hanna Mikkola, Steven Clarke, Brigitte Gomperts, James Zhen, Andrew Goring

Audree Fowler Fellows in Protein Science Review Committee

Amy Rowat, Margot Quinlan and John Colicelli

Boyer/Parvin Postdoctoral Awards Review Committee

Peter Bradley (Chair), Alison Frand, Sonal Srikanth

Diversity, Equity and Inclusion Committee

Dana Franklin, Timmie Britton, Edgar Perez-Reyes, Yesica Mercado-Ayon, Salena Gallardo, Angelina Flores, Graham Read, Geoff Pronovost, Kelly Kennewick, Amara Thind, Raquel Aragon, Ralph Valentine Crisostomo, Carlos Galvan, Devin Gibbs, Manuel Mora, Chris Luthers, Gabriella Rubert, Matthew Romero, Daniel Velez-Ramirez, Aparna Bhaduri, Louis Bouchard, Jie Zheng, Jing Wen, Anthony Covarrubias, Siobhan Braybrook, Stephanie Correa, Claudio Villanueva, Elizabeth Tarling, Hilary Coller, Jocelyn Rodriguez, Bitta Kahangi, Ambre Bertholet, Sari Terrazas, Johnny Ji and Allison Schiffman.

Postdoctoral Researchers Committee

Daniel Velez-Ramirez, Astra Bryant, Erica Pandolfi, Yasaman Jami, Vijaya Pandey, Bethan Clifford, Roger Castells, Randilea Nichols Doyle, and Laurent Voisin

Whitcome Fellowship Review Committee

Peter Tontonoz (Chair), Tamer Sallam, James Wohlschlegel, Claudio Scafoglio, Marlin Touma, Jing Huang, Louis Bouchard

Dissertation Award Committee

Jeff Abramson, Valerie Arboleda, Pavak Shah

Diversity, Equity and Inclusion Award Committee

Stephanie Correa and Claudio Villanueva

Teaching Excellence Award Reviewer

Jeff Maloy

Molecular Biology Interdepartmental Ph.D. Program (MB-IDP) Committee

Hilary Coller (Interim Chair)

Home Area Directors: Elissa Hallem (IMMP), Thomas Vallim (GREAT),
Feng Guo (BBSB), Alvaro Sagasti (CDB)

Annual Retreat Planning Committee

Alejandro Torres and Vivian Yang (Co-chairs), Samuel DeMario, Dana Franklin, Ian Ford, Gregory Lum, Andrew Lund, Emily Peluso, Luke Riggan, Jocelyn Rodriguez, Angela Sun, Qiao-Qiao Wang, Amy Yu, Kristie Yu, James Zhen

Annual Retreat Poster Judges

Andrew Goldstein, Aparna Bhaduri, Bethan Clifford, Daniel Velez-Ramirez, James Wohlschlegel, Leslie Sedgeman, Steven Clarke

MBI PROGRAMS & EVENTS

The Audree Fowler Fellows in Protein Science



Dr. Audree V. Fowler has been a dedicated Bruin for more than 60 years. A strong supporter of the basic sciences, the performing arts, and medicine at UCLA, she demonstrated her devotion to the College of Letters and Science by establishing the Audree V. Fowler Graduate Fellowship in Protein Science, to be administered by the Molecular Biology Institute. To date, these fellowships have been awarded to more than thirty talented graduate students.

Audree received her B.S. in chemistry from UCLA in 1956 and went on to earn a Ph.D. in biochemistry in 1963, when that field was almost exclusively male. She served as a NIH postdoctoral fellow at the Albert Einstein College of Medicine in New York and in UCLA's Department of Biological Chemistry before becoming a research biological chemist in the David Geffen School of Medicine at UCLA. She built an eminent research career which includes over 80 publications. She also built strong connections with the Molecular Biology Institute, the Department of Biological Chemistry in the David Geffen School of Medicine, the UCLA Protein Microsequencing Facility—where she served as director for 15 years—and the Jonsson Comprehensive Cancer Center. She is one of five founding members of the Association of Biomolecular Resource Facilities (ABRF), which is now an international organization of 1,100 members. She was named the first lifetime member of the organization in 2008.

Although she retired from UCLA in 1999, Fowler is determined to remain active. She is an avid Bruin, maintaining her emeriti membership in the Molecular Biology Institute and serving on the board of directors of Women & Philanthropy. She also is on the executive board of Design for Sharing and the Iris Cantor UCLA Women's Health Center, and she volunteered at the Santa Monica Pier Aquarium—formerly the UCLA Ocean Discovery Center.

She expanded her involvement by giving tours of the Palisades Park hosted by the Santa Monica conservancy and then the conservancy was looking for docents for the Marion Davies Beach House. Audree has been a docent since it opened in 2009. It is only fitting since the Protein Facility was located very close to the Marion Davies Children's Clinic at UCLA (a note in passing the funding of the center was the most given to UCLA at that time).

The Audree V. Fowler Graduate Fellowships in Protein Science serves as a fitting testament to Fowler's commitment and dedication to her research and to UCLA. The fellowships are awarded to promising Ph.D. candidates working in protein science. The crucial resources provide by the award advance the education of the Fowler Fellows by enabling them to concentrate on their innovative research.

"The sciences gave me a great life and now I want to help others to have the same opportunities I enjoyed."

2021 Recipients

- Weixian Deng (Plath and Wohlschlegel Labs) "CMMB-based isopropanol gradient peptide fractionation (CIF) enables rapid and robust off-line peptide mixture fractionation in bottom-up proteomics"
- Sean Jiang (Eisenberg Lab) "Amyloid fibrils from frontotemporal lobar degeneration with TDP-43 inclusions (FTLD-TDP) is composed of TMEM106B, rather than TDP-43"
- Maria Flores (Rodriguez Lab) "CryoEM structure of human CPEB3's functional prion-like domain"
- Carter Lantz (Loo Lab) "Mass Spectrometry Analysis Can Reveal Key Sequence and Structural Information for Proteins and Protein Complexes"
- Logan Richards (Rodriguez Lab) "Enabling structure determination by electron diffraction using fragment-based phasing"

More information about this year's recipients and their research can be found www.mbi.ucla.edu/fowler-fellows

Boyer/Parvin Postdoctoral Awards

MBI Founding Director Paul Boyer had a deep regard for postdoctoral researchers. He appreciated the dedication, intellect and skill they bring and the impact of their research on scientific progress. It was in this spirit that Dr. Boyer donated a portion of his 1997 Nobel Prize to establish the Postdoctoral Awards. Additional support from his longtime colleague James Peter, from Phyllis Parvin on behalf of the Parvin Foundation and from Amgen Inc. created an opportunity to recognize over 100 exceptional researchers in Chemistry, Biochemistry and Molecular Biology, for the past 16 years.

The Parvin Foundation has been a tireless supporter of molecular biology research since the gift of \$1 million made the Molecular Biology Building (now Paul D. Boyer Hall) possible. Foundation President Phyllis Parvin continues to be an avid supporter of the postdoctoral awards. Thanks to the Parvin Foundation, Amgen Inc and individual donors who believe in the value of postdoctoral research, we are able to continue the tradition of recognizing these exceptional scientists.

Award Recipients:

Yolanda Markaki, Ph.D. (Plath lab)

"How to silence a chromosome"

Beibei Wu, Ph.D. (Gwack lab)

"ORAI1 trafficking mechanism in inflammatory T cells"

Xian Xia, Ph.D. (Zhou lab)

"Structural and functional studies of disease-related protein complexes by cryoEM"

Thursday Seminar Series

9:00 AM/4:00 PM – Zoom/Boyer Hall 159

This seminar series continues to be a focal point of MBI activities. The 2021-2022 schedule included national and internationally renowned speakers, invited and hosted by MBI Faculty and students from the MB-IDP program.

2021-2022 Academic Year				
MBI Thursday Seminar Series				
Date	Speaker	Institution	Title	Host
9/30/21	Dorothy Schafer, Ph.D.	Associate Professor, Neurobiology University of Massachusetts Medical School	"Microglia and Neural-immune Signaling Within Brain Circuits"	Ye Zhang
10/7/21	Marco Mangone Ph.D.	Associate Professor, Biodesign Institute Arizona State University	"miRNAs and Alternative Polyadenylation"	Oliver Fregoso
10/14/21	Amy Shyer, Ph.D.	Assistant Professor and Head of the Laboratory of Morphogenesis The Rockefeller University	"A reciprocal cell-matrix exchange regulates the emergence of ordered structure in the skin"	Alvaro Sagasti and Siobhan Braybrook
10/21/21	Jurgen Knoblich, Ph.D.	Scientific Director Institute of Molecular Biotechnology of the Austrian Academy of Sciences (IMBA), Vienna	"Using cerebral organoids to discover human-specific mechanisms of brain development"	Anne Roe and April Pyle
11/4/21	Maitreyi Das, Ph.D.	Associate Professor, Biochemistry & Cellular and Molecular Biology University of Tennessee, Knoxville	"Principles of cell polarization: a journey through growth and cytokinesis"	Alice Soragni
11/18/21	Yunsun Nam, Ph.D.	Associate Professor, Biochemistry University of Texas Southwestern Medical Center	"How RNA Shape Regulates Gene Expression"	Feng Guo
12/2/21	Maralice Conacci Sorrell, Ph.D.	Assistant Professor, Cell Biology University of Texas, Southwestern Medical Center	"Defining nutritional needs of MYC-transformed cells"	Claudio Villanueva
1/13/22	Danelle Devenport, Ph.D.	Associate Professor, Molecular Biology Princeton University	"Principals of Planar Cell Polarity: From Molecules to Morphogenesis"	Alvaro Sagasti
1/20/22	Titia de Lange, Ph.D.	Leon Hess Professor American Cancer Society Professor Head of Laboratory of Cell Biology and Genetics Director, Anderson Center for Cancer Research The Rockefeller University	"Telomere shortening: Why and How?"	Oliver Fregoso
1/27/22	Sara Linse, Ph.D.	Professor, Biochemistry and Structural Biology Lund University	"Secondary nucleation in amyloid formation"	David Eisenberg

2/3/22	Catriona Jamieson, M.D., Ph.D.	Professor, Medicine University of California, San Diego UC San Diego Koman Family Presidential Endowed Chair in Cancer Research Director, Sanford Stem Cell Clinical Center Deputy Director, UC San Diego Moore's Cancer Center Chief, Division of Regenerative Medicine Director, CIRM Alpha Stem Cell Clinic at UC San Diego Co-Leader, Hematologic Malignancies Program	"Malignant Deaminase Activation Drives Pre- Cancer Stem Cell Generation"	Hilary Coller
2/17/22	Weizhe Hong, Ph.D.	Associate Professor, Biological Chemistry, Neurobiology David Geffen School of Medicine University of California, Los Angeles	"Understanding the Social Brain"	Thomas Vallim
2/24/22	Guojun Bu, Ph.D.	Mary Lowell Leary Professor and Chair, Department of Neuroscience Jorge and Leslie Bacardi Associate Director, Center for Regenerative Medicine Mayo Clinic, Jacksonville	"Pathobiology of APOE in Alzheimer's disease"	Chao Peng
3/3/22	Sundeep Kalantry, Ph.D.	Associate Professor, Human Genetics University of Michigan	"Tracing the Evolutionary Origins of X-chromosome Inactivation"	Kathrin Plath
3/10/22	Katey Rayner, Ph.D., F.A.H.A.	Associate Professor Member, College of the Royal Society of Canada Director, Biochemistry Graduate Program Department of Biochemistry, Microbiology, Immunology Faculty of Medicine University of Ottawa Heart Institute	"Cholesterol, inflammation and atherosclerosis: Expecting the unexpected"	Thomas Vallim
3/17/22	Cosimo Commisso, Ph.D.	Director Associate Professor, Cell and Molecular Biology of Cancer Program Sanford Burnham Prebys Medical Discovery Institute	"How Does Glutamine Stress Influence Tumor Progression and Therapy?"	Edward De Robertis
3/31/22	Livia Schiavinato Eberlin, Ph.D.	Associate Professor, Surgery Baylor College of Medicine	"Guiding Clinical Decisions with Chemical Information Provided by Direct Mass Spectrometry Technologies"	Joseph Loo

4/7/22	Beronda Montgomery, Ph.D.	MSU Foundation Professor, Biochemistry and Molecular Biology, Microbiology and Molecular Genetics Michigan State University	"Shaping Up and Responding: Color Vision and Light-Dependent Development in Cyanobacteria"	Beth Lazazzera
4/14/22	Manu Platt, Ph.D.	Professor, Biomedical Engineering Associate Chair for Graduate Studies Georgia Institute of Technology	"Powers (and Problems) of Proteases in Tissue Destructive Diseases"	MBI/SEDS
4/21/22	David Schneider, Ph.D.	Professor, Microbiology and Immunology Stanford University	"Following host trajectories through disease space to understand resilience mechanisms"	MBI Students and Postdocs
5/5/22	Nadya Dimitrova, Ph.D.	Assistant Professor, Molecular, Cellular & Developmental Biology Yale University	"Long noncoding RNAs: hidden friends and foes in the cancer genome"	Hilary Coller
5/12/22	Kumaran Ramamurthi, Ph.D.	Deputy Chief and Senior Investigator Laboratory of Molecular Biology National Cancer Institute National Institutes of Health	"Synthetic Bacteria Deliver the Goods (to Cancer Cells)"	Hung Ton-That and Emily Smith
5/26/22	Diana Hargreaves, Ph.D.	Associate Professor, Molecular and Cell Biology Laboratory Richard Heyman and Anne Daigle Endowed Developmental Chair Salk Institute for Biological Studies	"Remodeling the Chromatin Landscape: SWI/SNF Complexes in Development and Disease"	Douglas Black
6/2/22	Steven Kliewer, Ph.D.	Diana K. and Richard C. Strauss Distinguished Chair in Developmental Biology University of Texas, Southwestern Medical Center	"Alcohol and the Neuroendocrinology of FGF21: A Sobering Update"	Thomas Vallim

MBI Interdisciplinary Faculty Seminars

These informal presentations contribute to our scientific progress and enable our membership to keep up-to-date on current research developments by the MBI faculty.

2021-2022 Academic Year			
MBI Interdisciplinary Faculty Seminar Series			
Date	MBI Faculty Member	Department	Title
12/14/21	Eric Deeds, Ph.D.	Integrative Biology and Physiology	“A lack of distinct cellular identities in scRNA-seq data: revisiting Waddington's landscape”
2/8/22	Gal Bitan, Ph.D.	Neurology	“Exophers - a new mechanism for maintaining cellular integrity and homeostasis from nematodes to humans”
4/12/22	Yi-Rong Peng, Ph.D.	Ophthalmology	“Molecular and Evolutionary Mapping of Neural-Circuit Specialization in High-Acuity Vision”
5/10/22	Amjad Askary, Ph.D.	Molecular, Cell, and Developmental Biology	“Spatial profiling of gene expression and history of the cells: why and how”

MBI Annual Retreat & Research Conference



***Keynote Speaker
Natalia Jura, PhD***

The MBI Retreat is organized each year by student representatives from the Molecular Biology Interdepartmental Ph.D. Program, the Cellular & Molecular Biology Training Program and the Cell-Biology Interface Training Program. The program offers the opportunity for the MBI community; students, postdocs and faculty, to gather together to celebrate the diversity of intellectual pursuits that comprise modern molecular biology at UCLA.

The 43rd MBI Annual retreat was held on September 8th – 10th, 2021 via Zoom and in-person at UCLA. Over 200 people attended the retreat, including 174 graduate students and 63 faculty members. 38 students presented posters and 14 students gave oral presentations. One of the highlights of this year's retreat was the presentation by our Keynote Speaker, Dr. Natalia Jura from the University of California San Francisco. The title of her talk was *"How do Growth Factors Activate their Receptors."*

Another highlight of the retreat was the Career Panel, where professionals from industry, government, consulting and patent law outlined their career paths and gave professional development advice to the students.

The scheduled panelists this year were:

- Omar Barnaby, Ph.D. (Amgen)
- Mariana F. Uchoa, Ph.D. (Karma Biotechnologies)
- Rishi Masalia, Ph.D. (LeafWorks)
- Dara Burdette, Ph.D. (Gilead Sciences)
- Neil Bajpayee, Ph.D. (Kite Pharma)
- Lynnea Waters, Ph.D. (Amgen)
- Wen Wang, Ph.D. (McKinsey)
- Maryam Zaringhalam, Ph.D. (National Library of Medicine's Office of Strategic Initiatives)
- Erin Wall, Ph.D. (Food and Drug Administration)
- Wei Wu, Ph.D. (Johnson & Johnson Innovation)

Conference Program

Wednesday, September 8

- 1:00-1:20 p.m.** **Welcome Remarks**
Hilary Collier, Ph.D.
- 1:30-2:45 p.m.** **Student/Faculty Talks**
- 1:30-1:45 p.m. Kristie Yu (IMMP)
1:45-2:00 p.m. Andrew Hildreth (IMMP)
2:00-2:15 p.m. Jeff S. Abramson, Ph.D. (Physiology)
2:15-2:30 p.m. Pavak Shah, Ph.D. (MCDB)
2:30-2:45 p.m. Ambre M. Bertholet, Ph.D. (Physiology)
- 3:00 p.m.-4:30 p.m.** **DEI Workshop**
- 5:00-7:00 p.m.** **Meet the Faculty**

Thursday, September 9

- 1:00-2:15 p.m.** **Student/Faculty Talks**
- 1:00-1:15 p.m. Jenna Giafaglione (CDB)
1:15-1:30 p.m. Luis Sanchez (CDB)
1:30-1:45 p.m. Matt Lowe (CDB)
1:45-2:00 p.m. Devin Gibbs (CDB)
2:00-2:15 p.m. Hua Linda Cai, Ph.D. (Anesthesiology)
10:15-10:30 a.m. Jimmy Hu, Ph.D. (Dentistry)
- 2:30-3:30 p.m.** **Concurrent Career Panel**
- Panel I: Industry Research Careers
Panel II: Non-traditional Research Careers
- 3:45 p.m.-4:45 p.m.** **Poster Session**
- 6:00p.m.** **Junior Researcher Social & Trivia Night**

Friday, September 10

10:00-10:45 a.m. Student/Faculty Talks

10:00-10:15 a.m. Claudio Villanueva, Ph.D.
10:15-10:30 a.m. Peter Back (IMMP)
10:30-10:45 a.m. Anthony J. Covarrubias, Ph.D. (MIMG)

11:00 a.m.-12:00 p.m. Student/Faculty Talks

11:00-11:15 a.m. David (Alex) Salisbury (GREAT)
11:15-11:30 a.m. Ian Ford (IMMP)
11:30-11:45 a.m. Sean Jiang (BBSB)
11:45 a.m.-12:00 p.m. Aparna Bhaduri, Ph.D. (Biological Chemistry)

1:30-2:30 p.m. Keynote Address – Natalia Jura, Ph.D.

2:45-4:00 p.m. Student/Faculty Talks

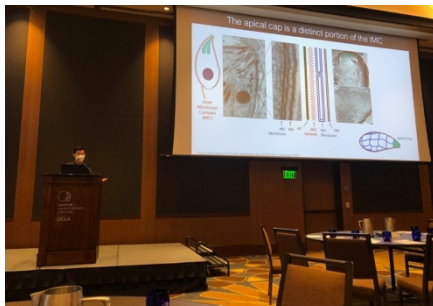
2:45-3:00 p.m. Luke Riggan (CDB)
3:00-3:15 p.m. Lucia Ichino (GREAT)
3:15-3:30 p.m. Elissa Hallem, Ph.D. (MIMG)
3:30-3:45 p.m. Pavlo Nesterenko (CDB)
3:45-4:00 p.m. Rachel Hodge (CDB)



4:30-5:30 p.m. Presentation of Awards

Poster Awards
Teaching Awards
DEI Award
Dissertation Award
Closing Remarks

5:30 p.m. Closing Reception



MBI Diversity Equity and Inclusion

The MBI and the MB-IDP are committed to providing an inclusive environment that supports every member. This year we sought to develop our community, ensure accountability, and provide training and resources that will lead to a more inclusive environment.

I am very grateful to our Diversity, Equity and Inclusion advisors Claudio Villanueva and Stephanie Correa. I am also grateful to the faculty, staff, postdoctoral fellows and students who are part of the Diversity, Equity and Inclusion Committee for their contributions to the MBI and their thoughtful input.

The MB-IDP hosted Journey Talks that provided an opportunity for MBI faculty to share with students' information about their backgrounds, including their successes and failures, and the obstacles they faced and overcame. We thank Michael Wells, Ye Zhang, and D'Juan Farmer for participating in this series and sharing their reflections.

MBI Seminar Speaker Beronda Montgomery gave a seminar on mentorship in addition to her scientific seminar. The MBI was excited to partner with SACANS, GPB, and DGSOM to host Manu Platt. Dr. Kirsten Turlo presented a seminar entitled "Diversity in Our STEM Ranks: Describing Data, Finding Hope and Seeing Change." Her seminar provided data on racial disparities in the experience of new faculty in STEM. The MBI also hosted an academic class on ancestry and racism by Dr. Nelson Freimer and Jazlyn Mooney entitled "Reducing Racism in Genetics: Analyzing Ancestry-Not Race."

The MBI is enthusiastic about partnering with student groups. The MBI collaborated with SACNAS to host a lunch with MB-IDP alumna Matilde Miranda who shared her experience doing a postdoc abroad. We also partnered with AMEBA to host a Demystifying the Oral Qualifying Exam event to help graduate students understand the expectations for the qualifying exam, and helping them to prepare.

The MB-IDP has worked to ensure that incoming students have opportunities to learn about the organizations dedicated to inclusion within our community. A DEI session was held during recruitment and student groups are invited to present at Orientation.

Our partnership with Cal-State Northridge has continued, and represents a way in which MB-IDP students can connect with students at Cal State Northridge interested in pursuing a Ph.D.

The MBI is working to develop new activities that will promote student well-being and their sense of integration into our community. A Campus Cleanup was held over the summer and an Arts and Crafts Day is scheduled for later in August.

The MBI recognizes excellence in Diversity, Equity and Inclusion at the MBI Retreat. Congratulations to this year's winners: Professor Siobhan Braybrook, Raquel Aragon, and Edgar Perez and the members of the Buddy System Committee.

Honoring Former MBI Director, Arnold J. Berk MD

The MBI was delighted to partner with Professor Mike Carey and Mike Teitell and the Jonsson Comprehensive Cancer Center (JCCC) to host a Symposium in honor of Arnie J. Berk, Professor of Microbiology, Immunology and Molecular Genetics and former Director of the Molecular Biology Institute.

UCLA Molecular Biology Institute &

UCLA Jonsson Comprehensive Cancer Center

A special event honoring

Arnold Berk, MD

Monday, June 6, 2022 | 3:00PM | Boyer Hall 159

Speakers

Welcome by Hilary Collier, PhD
Interim Director, Molecular Biology Institute

Owen Witte, MD PhD - Professor, UCLA

Harvey Lodish, PhD - Professor, MIT
(video)

Michael Carey, PhD - Professor, UCLA

Luisa Iruela-Arispe, PhD - Former MBI Director
(video)

Douglas Black, PhD - Professor, UCLA

Siavash Kurdistani, PhD - Professor, UCLA

Urs Greber, PhD - Professor, U. of Zurich
(video)

Steven Yoshinaga, PhD - Berk lab alumnus

Gregory Horwitz, PhD - Berk lab alumnus

Announcement by
Janice Shintaku
Director, Life Sciences Development

The Symposium was attended by former students of Professor Berk and members of the MBI and JCCC communities. In a series of in-person and video presentations, Professor Berk's colleagues shared memories of his impact on them as a collaborator, co-author, mentor and advisor. The presentations spoke of Arnie's sharp wit, commitment to the truth, scientific insight, and dedication to the members of his lab and the greater scientific community.

Speakers included Professor Owen Witte, Professor Harvey Lodish (MIT), Professor Michael Carey, Professor Luisa Iruela-Arispe (Northwestern University), Professor Douglas Black, Professor Siavash Kurdistani, Professor Urs Greber (University of Zurich), former student Dr. Steven Yoshinaga, and former student Dr. Greg Horwitz.

In conjunction with the symposium, and a reunion of Berk lab alumni, a new Arnold J. Berk Fund has been established to support graduate students and postdoctoral fellows. Contributions to the fund are welcome. We thank Life Sciences Development Officer Janice Shintaku for her efforts to establish and advertise the fund and organize the Symposium.

MBI FACULTY

Newly Appointed MBI Members

Quen Cheng, M.D., Ph.D.

Assistant Professor, Medicine-Infectious Diseases

<https://chenglab.dgsom.ucla.edu/pages/>

One of the factors that determines infection severity is what happened in the prior history of innate immune cells. How past exposures reprogram innate immune cells is known as “trained immunity.” The research in the Cheng lab examines the molecular mechanisms of trained immunity and how it contributes to the variable outcomes of infections. We are particularly interested in the intersection of signaling and epigenetic control of gene regulation. In response to pathogen-associated molecules, innate immune cells activate transcription factors such as NFκB, IRFs, STATs, and AP-1. These transcription factors bind not only to available cell type-specific enhancers, but also to previously inaccessible regions of the chromatin. This results in nucleosome repositioning and histone modifications as previously latent enhancers are activated, thus altering gene expression responses to subsequent stimuli. The Cheng lab is interested in how these signaling pathways and transcription factors work together in response to cytokines, pathogens, and chronic disease states to reshape the epigenome. Our long-term hope is that by better understanding how innate immunity is trained; we will be able to predict which patients are at risk for severe infections and provide our own “training” of the immune system to improve human health.

Alison Chu, M.D.

Assistant Professor-in-Residence, Pediatrics

<https://profiles.ucla.edu/alison.chu>

Dr. Chu’s research has been focused on improving the health of neonates requiring intensive care, either those born prematurely or low birthweight. There are a number of conditions that affect the long-term outcomes of these neonates, including both intrauterine and extrauterine postnatal factors. Her previous work (including my K08) was focused on placental insufficiency as a main contributor to developmental programming of cardiovascular disease. She has worked with murine models over the last nine years at UCLA and prior during her fellowship training years to study mechanisms underlying endothelial reprogramming after adverse exposures. Her interest in vascular physiology and biology was bridged with placental insufficiency in the recent study of epithelial membrane protein-2 (EMP2) and its role in murine placentation and reproduction.

In Dr. Chu’s R01 grant (awarded May 2021), she and her co-investigators studied EMP2 in a completely novel context of retinopathy of prematurity, another disease that contributes significantly to long-term neurodevelopmental outcomes of ex-premature infants. This disease can be devastating and lead to blindness in severe cases, affecting neonates both individually in their life trajectory, but also contributing to significant public health cost. EMP2 has never been studied in ROP, and would be a novel therapeutic target. The preliminary data (published in IOVS 2020) demonstrates that Emp2 genetic knock-out mice are protected from

neovascularization in a murine model of oxygen-induced retinopathy (OIR), and Emp2 appears to modulate disease via alteration of angiogenic signaling [downregulation of hypoxia inducible factor 1-alpha (Hif1a) and vascular endothelial growth factor (VEGF)] from the neuroretina.

In the long term, Dr. Chu's career objective is to contribute to the understanding of vascular mechanisms of diseases affecting premature and low birth weight neonates, bridging my training in scientific research and my capabilities as a neonatologist and clinician, to improve the longterm outcomes of these neonates. Her long-term goal is to contribute to improvement of maternal and neonatal outcomes and to help build the next generation of physician scientists. To accomplish these goals, Dr. Chu is collaborating with scientists with expertise in angiogenesis and vascular disease, retinal function and disease, epidemiology and biostatistics, genomics and advanced imaging in order to optimize a multidisciplinary team approach using novel paradigms and cutting-edge techniques. In studying retinopathy of prematurity, Dr. Chu brought bench techniques and knowledge back to the bedside to improve outcomes for premature infants.

D'Juan Farmer, Ph.D.

Assistant Professor, Molecular, Cell and Developmental Biology

<https://farmer.mcdb.ucla.edu/>

Proper formation and growth of the calvaria is critical for the proper accommodation of the growing brain during embryonic and postnatal life. Sustained calvarial bone growth relies on fibrous joints called sutures, which simultaneously act as a barrier between neighboring bones and a source of stem cells to grow bones. In a common congenital abnormality called craniosynostosis, sutures are lost and neighboring bones prematurely fuse, limiting brain growth. In the Farmer lab, we integrate multiple animal models (i.e. mice and zebrafish) with cutting edge genomic, genetic and imaging technologies to decipher the molecular and cellular basis of calvaria development. The primary questions in the Farmer lab seek to under how the skeletogenic and non-skeletogenic mesenchyme is specified, how cranial sutures are established, how calvarial bone and brain growth are coupled, and how disrupting these processes lead to craniofacial defects. These efforts will inform appropriate intervention for the various genetic mutations that cause craniosynostosis. Currents efforts include deciphering the gene regulatory network controlled by the transcription factors Twist1 and Tcf12, and determining the lineage relationships between the progenitors that grow bones and the connective tissue that supports the bone.

Jennifer Fulcher, M.D., Ph.D.

Assistant Professor, Medicine-Infectious Diseases

<https://www.ucladdrcc.med.ucla.edu/members/members/jennifer-fulcher-md-phd>

Dr. Jennifer Fulcher is an Assistant Professor in the Department of Medicine-Infectious Diseases. Her lab's current research focus is on the interaction between the gut microbiome and mucosal immune activation, and how that affects infection susceptibility and disease progression. The goal is to define how the microbiome influences both the mucosal immune environment and systemic inflammation, and use that information to inform therapeutic strategies to reduce inflammation. Her lab's work includes many translational studies using clinical

data and primary human tissues. The majority of the work is focused on HIV, but more recently the lab has participated in studies of SARS-CoV-2 infection. There are ongoing projects investigating the role of the microbiome in HIV susceptibility using ex vivo models of the human gut mucosa and defining the microbiome and metabolic changes associated with HIV seroconversion. Based on prior work identifying an association between methamphetamine use and increased prevalence of inflammatory bacteria in the gut, they have projects investigating what leads to these changes by examining how bacterial growth and metabolites are altered in the presence of methamphetamine. The group is similarly interested in the oral microbiome, as it has been shown to influence distant anatomic sites and clinical outcomes. Currently they are studying how methamphetamine use alters oral microbes, and how this may contribute to systemic inflammation.

Anusha Kalbasi, M.D.

Assistant Professor, Radiation Oncology

<https://www.uclahealth.org/radonc/the-kalbasi-lab>

The Kalbasi lab conducts basic and translational research at the interface of cancer and the immune system, with an emphasis on developing new strategies to treat sarcoma, a rare mesenchymal cancer for which UCLA is a center of excellence. The lab is also especially interested in approaches to improve the use and safety of radiotherapy in the treatment of sarcoma. Specific research areas include:

- (1) Reprogramming myeloid cells in sarcoma to induce anti-tumor immunity
- (2) Exploring and leveraging lymph nodes in T cell based therapies for cancer
- (3) IL9 receptor signaling in the effector function of tumor-specific T cells
- (4) Tumor cell-intrinsic resistance shared across radiotherapy and immunotherapy
- (5) Analysis of samples from human clinical trials of immunotherapy and/or radiotherapy

Melissa Lechner, M.D., Ph.D.

Assistant Professor, Medicine-Endocrinology, Diabetes and Metabolism

<https://profiles.ucla.edu/melissa.lechner#toc-id2>

Dr. Lechner's research interests relate to immune dysfunction in thyroid disease, including thyroid autoimmunity. Using mouse models and translational studies in patients, the Lechner lab is investigating immune mechanisms that contribute to autoimmune toxicities of immune checkpoint inhibitor cancer therapies. Their goal is to identify strategies to reduce autoimmune toxicities while not impairing the anti-cancer efficacy of checkpoint immunotherapy. Finally, the Lechner lab is also studying how checkpoint inhibitor immunotherapy-associated thyroid autoimmunity is similar and distinct from spontaneous thyroid autoimmune diseases, like Hashimoto's thyroiditis, so that immune modifying treatments can be used to alter disease progression in these patient populations.

Yi-Rong Peng, Ph.D.
Assistant Professor, Ophthalmology
<https://yirongpeng.com/>

Dr. Yi-Rong Peng is an Assistant Professor in the Department of Ophthalmology. The research goal of the Peng laboratory is to build a next-generation research paradigm that combines high throughput genomic, transcriptomic, and proteomic methodologies with gene editing and stem cell technology to advance the understanding of retinal formation and degeneration. The ultimate goal is to identify new pathogenetic mechanisms for visual defects and provide a therapeutic strategy to prevent vision loss and facilitate vision recovery

Christopher Seet, M.D., Ph.D.
Assistant Professor, Medicine-Hematology & Oncology
<https://profiles.ucla.edu/christopher.seet>

The Seet Lab is broadly focused on gaining new insights into T development and T cell molecular and cellular biology as it relates to anti-tumor immunity, and applying these findings to develop new approaches to T cell therapies for cancer. The lab direction draws on Dr. Seet's background in stem cell biology, lymphocyte development, T cell immunology, and clinical hematology/oncology, stem cell transplantation and cell therapy. The emphasis of the lab's work is on developing projects that specifically address unmet scientific and clinical needs in cancer immunotherapy. The lab uses human cells for investigation and humanized mouse models for interrogating immune function.

Brian Shuch, M.D.
Associate Professor, Urology
<https://profiles.ucla.edu/brian.shuch>

Kidney cancer is a diverse disease with unique somatic and germline variants responsible for 18 current subtypes. Many of these alter the fundamental metabolism of kidney tumors, some of which can be exploited therapeutically. The Shuch lab is currently studying two types of kidney tumors that have complex I loss. One in particular, HLRCC, results from a germline variant in the Fumarate hydratase gene. We helped describe FH as a gene involved in homologous recombination and are now exploiting this in the lab and clinically. Other collaborations are working with the Shackelford team to evaluate glutaminase inhibition and the Christofk lab for asparaginase inhibition in these models. The lab is motivated to define and exploit drivers in our kidney cancer models systems to advance to clinical use as soon as possible.

Michael Wells, Ph.D.
Assistant Professor, Human Genetics
<https://www.michaelfwellsphd.com/wells-lab>

The Wells laboratory is interested in understanding the ways in which human genetic variation influences phenotypic variation under healthy and disease contexts using stem cell-derived neural cells as our primary model system. Towards this goal, Dr. Wells has developed a novel

experimental platform known as a “cell village” that involves the co-culturing of dozens of disparate human donor lines in the same in vitro environment. Cell villages capture genetics, molecular, and phenotypic heterogeneity housed under identical conditions which eliminates the technical variation that often masks biologically-significant differences across genetic backgrounds. Village-based readouts include low-coverage whole genome sequencing, singlecell RNA sequencing, and an array of cell-based assays including cell growth and response to major signaling pathway activators. Using this approach as well as conventional non-village strategies and 3D cerebral organoids, the laboratory will pursue the following broad objectives:

- (1) Identify genetic modifiers of gene expression in neurotypical and diseased cell lines across a range of neural cell types, including neural progenitors, glia, and post-mitotic neurons.
- (2) Detect dysregulated molecular pathways in cell lines derived from patients afflicted with neurodevelopmental diseases, such as autism, intellectual disability, and schizophrenia.
- (3) Innovate new village-based phenotypic measurements that will allow for high-throughput assessment of complex, physiologically-relevant cellular behaviors
- (4) Incorporate CRISPR-induced genetic modifications into the village platform to discover the impact of genetic mutations on a wide range of genetic backgrounds
- (5) Generate three-dimensional organoid structures using villages and non-villages to determine the impact of disease genetics on cortical structuring and development.

Yuhua Zhang, Ph.D.

Associate Professor, Ophthalmology

<https://doheny.org/researchers/yuhua-zhang-phd/>

The retina is the only portion of the central nervous system (CNS) that can be studied noninvasively through the unique optical window of the eye. In principle, the neural, glial, and vascular tissue in the retina of a living human subject can be observed at the histologic level. Retinal imaging has thus been serving as a major diagnostic modality for retinal disease and playing a critical role in the clinical management of systemic and CNS disorders. Dr. Zhang’s research focuses on developing advanced retinal imaging technology, emphasizing adaptive optics (AO) imaging, on facilitating in vivo study of chorioretinal disease and systemic disease at the cellular and molecular levels. The Zhang lab has developed state-of-art high-resolution retinal imaging instruments that integrate adaptive optics (AO) and modern imaging techniques, such as scanning laser ophthalmoscopy (SLO) and optical coherence tomography (OCT), to reveal the 3-D retinal structure in the living eye. The AO-SLO-OCT has imaged cone and rod photoreceptors in the living human retina. The lab has recently built a high-speed adaptive optics near-confocal scanning ophthalmoscope (AONCO), which can image the living human retina with a frame rate up to 800 Hz. High-speed and high-resolution imaging enables direct and accurate measurement of the movement of individual erythrocytes and leukocytes flowing in human retinal capillaries without using any exogenous contrast agents, opening a new horizon for studying high-order retinal hemodynamics that reflect the mechanical property of the retinal capillaries. The lab is developing a new generation of technology for in vivo imaging of the retina at the molecular level. The group is looking forward to gaining the ability to unveil the molecular signatures of retinal health by objective characterization of the compounds in the retina and its supportive retinal pigment epithelium (RPE), which are associated with retinal metabolism and implicated in the process of aging and the pathogenesis of various retinal diseases.

MOLECULAR BIOLOGY INTERDEPARTMENTAL PH.D PROGRAM (MBIDP)

Ashley Straight and Nancy Jensen (SAO)

Since the program's initiation in 1966-67, a total of 540 individuals have earned their Ph.D. degree in Molecular Biology. During the 2021-22 academic year, there were 130 students in the MBIDP, including 36 admissions, and 16 completing their degree requirements.

The 2021-22 faculty mentors in the Molecular Biology IDP have primary appointments in the departments of: Biological Chemistry; Cardiology; Chemical & Biomolecular Engineering; Chemistry & Biochemistry; Human Genetics; Integrative Biology & Physiology; Microbiology, Immunology & Molecular Genetics; Molecular & Medical Pharmacology; Molecular, Cell & Developmental Biology; Neurobiology; Neurology; Ophthalmology; Pathology & Laboratory Medicine; Pediatrics; Psychiatry & Behavioral Science; Radiation Oncology; and Surgery.

Home Areas promote in-depth educational programs while maintaining flexibility for students to explore beyond a single home area and faculty to contribute to multiple home areas according to their research interests. The Molecular Biology IDP consists of four home areas: Cell & Developmental Biology (CDB); Biochemistry, Biophysics, & Structure Biology (BBSB); Gene Regulation, Epigenomics and Transcriptomics (GREAT); and Immunity, Microbes, & Molecular Pathogenesis (IMMP). Each home area has a director that acts as the Graduate Adviser for that area's students.

Hilary Collier	MBIDP Chair
Elissa Hallem	Immunity, Microbes, & Molecular Pathogenesis Home Area Director
Feng Guo	Biochemistry, Biophysics, & Structural Biology Home Area Director
Thomas Vallim	Gene Regulation, Epigenomics & Transcriptomics Home Area Director
Alvaro Sagasti	Cell & Developmental Biology Home Area Director

2022 Recruitment Data

Home Area	Applications	Interviews Total	Admits	Enroll
BBSB	72	24	15	8
CDB	176	36	26	10
GREAT	61	20	12	5
IMMP	299	33	20	13

MB-IDP Students 2021-2022

Student Name	Mentor	Awards/Fellowships
ABASCAL, JENSEN	Dubinett, Steven	
ALEXANDER, NOAH	Kruglyak, Leonid	

ALONSO, VALENTINA	Hoffmann, Alexander	
ALVAREZ, PABLO	Li, Melody	T32 Microbial Pathogenesis Training Grant
ALVAREZ, SANDY	Butler, Samantha	F31 Ruth L. Kirschstein National Research Service Award
ARABPOUR, AURIANA	Clark, Amander	Mell and Molecular Biology Training Grant, Broad Stem Cell Research Center Training Program
ARCE, DANIEL	Black, Douglas	Cell and Molecular Biology Training Grant
ARAGON, RAQUEL	Spencer, Melissa	T32 Muscle Cell Biology, Pathophysiology, and Therapeutics Training Program
ATAI, KAISER	Coller, Hilary	Whitcome Fellowship
ATOLIA, ETA	Butte, Manish	Gates Foundation Grant
BACK, PETER	Bradley, Peter	Whitcome Fellowship
BARTOLO, GLORIA	Hallem, Elissa	Cell and Molecular Biology Training Grant
BOONE, BRANDON	Jacobsen, Steve	Whitcome Fellowship
BRITTON, TIMMIE	Ton-That, Hung	
CANO, CLARA	Plath, Kathrin	Whitcome Fellowship
CARSTENS-KASS, JESSICA	Braybrook, Siobhan	First place in Anderson School of Management Cross-Campus Innovation Challenge, sustainability track
CHEN, HOWARD	Su, Maureen	
CHEN, XINYUAN	Black, Douglas	John W. Phillips Legacy Award 2022, RNA SOCIETY Poster Award at RNA 2022
CHENG, MANDY	Su, Maureen	2022 AAI Trainee Abstract Award, Schering Award, Mitsuo Takasugi Award, T32 Ruth L. Kirschstein National Research Service Award, Whitcome Pre-Doctoral Fellowship in Molecular Biology
CHENG, XINYI (CINDY)	Eisenberg, David	Whitcome Fellowship
CHEUNG, NIKKI	Clubb, Robert	Cell and Molecular Biology Training Grant
CHIEN, PEGGIE	Pyle, April	European Molecular Biology Organization, Ruth L. Kirschstein National Research Service Award (NRSA) Individual Predoctoral Fellowship (F31)
CROWELL, PRESTON	Goldstein, Andrew	KUH-ART Fellowship Award: Advanced Research Training in Kidney disease, Urology and Hematology
DALY, ALLISON	Smale, Stephen	Whitcome Fellowship
DAMODAREN, NIVEDITA	Plath, Kathrin/Black, Douglas	Broad Stem Cell Research Center Training Grant

DEPAOLA, PETER	Jiang, Lin	
DESAI, HETA	Backus, Keriann	UCLA Summer Mentored Research Fellowship
DIMAPASOC, MELANIE	Zack, Jerome	
DIRUSSO, JONATHAN	Clark, Amander	Whitcome Fellowship
DOLINSKY, JOSHUA	Eisenberg, David	
DUDLEY, LINDSEY	Xiao, Grace	
ELAHI, LUBAYNA	Kornblum, Harley	
EMAMI, MELISSA	Sagasti, Alvaro	Cota-Robles Fellowship
EMAMI, MICHAEL	Spencer, Melissa	
EVANS, DECLAN	Houk, Kendall	
FLORES, ANGELINA	Rowat, Amy	
FORD, IAN	Bensinger, Steve	
FREELAND, JACK	Graeber, Jack	Cell and Molecular Biology Training Grant
GALLARDO, SALENA	Butler, Samantha	Genomic Analysis Training Program (GATP) Fellowship
GALVAN, CARLOS	Lowry, Bill	UCLA Broad Stem Cell Research Center Training Program
GEHRED, NATALIE	Vondriska, Thomas	
GENSHEIMER, JULIA	Crooks, Gay	Lothar-Anne Rosenthal MSTP Fellowship
GIAFAGLIONE, JENNA	Goldstein Andrew	UCLA Molecular Cellular and Developmental Biology Department Retreat: Graduate Student Best Poster Award
GIBBS, DEVIN	Pyle, April/Crosbie, Rachelle	
GILLMAN, CODY	Gonen, Tamir	
GONZALEZ AKIMORI, DAMIA	Hallem, Elissa	Cell and Molecular Biology Training Grant
GONZALEZ-DEWHITT, KRISTOFER	Abramson, Jeff	
GROMOVA, TATIANA	Vondriska, Thomas	
HAN, JEE YUN	Boutros, Paul	UCLA Jonsson Comprehensive Cancer Center 2021 Fellowship Award
HEBNER, YUKI	de la Torre-Ubieta, Luis	John-Eiserling-Lengyel Teaching Award
HILDRETH, ANDREW	O'Sullivan, Tim	Whitcome Fellowship, NIH National Research Service Award F31, Life Sciences Dean's Excellence Award
HODGE, RACHEL	Jones, Leanne	Summer Mentored Research Fellowship
HYUN JI, JEONG		
JACKSON, NICHOLAS	Jones, Leanne	

JIANG, YI XIAO (SEAN)	Eisenberg, David	Life Science Dean's Excellence Award, UCLA Audree V. Fowler Fellowships in Protein Science, UCLA Travel Award, Biophysical Society
JIH, JONATHAN	Zhou, Hong	NIH T32 Dermatology Scientist Training Program 2022 Mitsuo Takasugi Award
JIMENEZ, ROBERT	Spencer, Melissa	NIH T32 Muscle Cell Biology, Pathophysiology, and Therapeutics (MCBPT) Training Program
JUDA, MICHAL	Lusis, Jake	Azrieli Graduate Student Award, Vascular Biology Training Program, Ruth L. Kirschstein National Research Service Award
KAHANGI, BITTA	Dubinet, Steven	
KAN, RYAN	Bhaduri, Aparna	Cell and Molecular Biology Training Grant
KANG, JOON	Zhou, Hong	
KENNEWICK, KELLY	Bensinger, Steven	
KIM, ALEXANDER	Zipursky, Larry	Whitcome Fellowship
KRONENBERG, MICHAEL	Carey, Michael	Tobacco-Related Disease Research Program Predoctoral Fellowship
KRYZA, JORDAN	Jones, Leanne	
LEE, DEREK	Yang, Lili	
LI, JOEY	O'Sullivan, Timothy	UCLA Dermatology Scientist Training Program T32
LI, YAN	Feng Guo	
LIM, HAN YOUNG	Black, Douglas	
LIN, LUDA	Soragni, Alice	
LIN, TASHA	Rao, Dinesh	California Institute for Regenerative Medicine- Broad Stem Cell Research Center Clinical Fellowship
LING, CENDI		
LUM, GREGORY	Hsiao, Elaine	Whitcome Fellowship
LUND, ANDREW	Gomperts, Brigitte	
LUTHERS, CHRISTOPHER	Kohn, Donald	Dr. Ursula Mandel Fellowship, American Society of Gene & Cell Therapy Conference Travel Award, American Society of Gene & Cell Therapy Outstanding Poster Presentation Award, Microbiology, Immunology and Molecular Genetics Takasugi Award, Ford Predoctoral Fellowship
MERCADO-AYON, YESICA	Butler, Samantha	
MIL, JESSENYA	Bhaduri, Aparna	
MILLER, JUSTIN	Yeates, Todd	UCLA Dissertation Year Fellowship
MILLER, MATTHEW	Butte, Manish	Jonsson Comprehensive Cancer Center Trainee Fellowship

MORALES, ABRIL	Lowry, Bill	T32 Neurobehavioral Genetics
MU, XUELANG	Gonen, Tamir	
NADRES, BRANDON	Shackelford, David	
NAGARI, ROHITH	Tontonoz, Peter	
NAVARRO, HECTOR	Hoffmann, Alexander	
NGUYEN, BRIAN	Yeates, Todd	Cell and Molecular Biology Training Grant
NGUYEN, HUYEN THI LAM	Soragni, Alice	
NGUYEN, LEANN	Li, Melody	
NISSON, KARLY	Fregoso, Oliver	
OCHOA, CHRISTOPHER	Memarzadeh, Sanaz & Yang, Lili	
OH, MICHAEL	Dubinett, Steven	
OKOBI, QUINCY	Nathanson, David	
PAN, HOPE	Eisenberg, David	Chemical-Biology Interface T32 Grant
PASQUARELLI, REBECCA	Bradley, Peter	Whitcome Fellowship, Microbial Pathogenesis Training Grant
PEREZ REYES, EDGAR	Dubinett, Steven	Tobacco Related Diseases Pre-Doctoral Fellowship
PEYDA, PARHAM	Black, Douglas	
POHL, KATHERINE	Yang, Xianjie	F31 Ruth L. Kirschstein National Research Service Award
RAMIREZ, NICHOLAS	Ton-That, Hung	2021 Ruth L. Kirschstein National Research Service Award
READ, GRAHAM	Weidhaas, Joanne	John-Eiserling-Lengyel Teaching Award
ROBERSON, ISAIAS	Clark, Amander	
RODRIGUEZ, BENANCIO	Hoffmann, Alexander	
RODRIGUEZ, JOCELYN	Shackelford, David	
ROE, ANNE	Pyle, April	NIH T32 Muscle Cell Biology, Pathophysiology, and Therapeutics Training Grant
RUBERT, GABRIELLA	Vallim, Thomas	
SALLADAY-PEREZ, IVAN	Covarrubias, Anthony	
SANCHEZ, LUIS	Zheng, Jie	International Society for Eye Research Bright Focus Glaucoma Symposium Travel Award, The Vision Restoration Summer School Travel Award
SANDOVAL, CARINA	Fregoso, Oliver	NIH F31 Ruth L. Kirschstein Predoctoral Individual National Research Service Award
SANDOVAL, RAFAEL	Zamudio, Jesse	2022 Biomedical Sciences Research Building Retreat Poster

SCHIFFMAN, ALLISON	Hoffmann, Alexander	Quantitative and Computational Biology Diversity & Equity Award, National Science Foundation Graduate Research Fellowship Program
SEGURA, EVA	Kohn, Donald	
SHIH, RYAN	Chen, Yvonne	
SMITH, EMILY	Vallim, Thomas and Tarling, Elizabeth	Whitcome Fellowship, Cell and Molecular Biology Fellowship
SOTO, JOSE	Bhaduri, Aparna	NSF Graduate Research Fellowship Program, Cota-Robles Fellowship, SACNAS 2022 Travel Award Scholarship
SUN, ANGELA	Reed, Elaine	Community of Transplant Scientists ATC 2022 Travel Grant
TERRAZAS, SARI	Xiao, Grace	Cell and Molecular Biology Training Grant
THIND, AMARA	Bradley, Peter	Cota-Robles 2 Fellowship
THURLOW, LAUREN	Johnson, Tracy	2021 MCDB Annual Research Conference Graduate Poster Award
TORRES, GRASIELA	Covarrubias, Anthony	
VALENTINE CRISOSTOMO, RALPH	Kohn, Donald	
VAVILINA-HALSTEAD, ANASTASIA	Mikkola, Hanna	Broad Stem Cell Research Center Training Grant
WALSH, BREANNA	Hallett, Elissa	MBIDP Best Written Qualifying Exam
WANG, SHUYA	Jacobsen, Steve	George G. & Betsy H. Laties Graduate Fellowship
WILLIAMS, ZNALA	Kurdistani, Siavash	
YANG, EMILY	Li, Melody	Sidney C. Rittenberg Award, Whitcome Fellowship
YANG, VIVIAN	Fregoso, Oliver	Microbial Pathogenesis Training Grant
YOO, ALEX	Crooks, Gay	
YU, AMY	Teitell, Michael	T32 Tumor Cell Biology Fellowship, Ruth L. Kirschstein Predoctoral Individual National Research Service Award
YU, KRISTIE	Hsiao, Elaine	Whitcome Fellowship, Keystone Symposium Travel Award
ZHANG, TIANHAO	Sun, Ren	
ZHEN, JAMES	Zhou, Hong	
ZHOU, KUANGYI	Yang, Lili	

MB-IDP Students who Advanced-to-Candidacy

Student Name	Mentor
Gillman, Cody	Gonen, Tamir
Kang, Joon	Zhou, Hong
Mu, Xuelang	Gonen, Tamir
Okobi, Quincy	Nathanson, David
Segura-Gensler, Eva	Kohn, Donald
Zhen, James	Zhou, Hong
DiRusso, Jon	Clark, Amander
Flores, Angel	Rowat, Amy
Gallardo, Salena	Butler, Samantha
Galvan, Carlos	Lowry, Bill
Gromova, Tanya	Vondriska, Tom
Lund, Andrew	Gomperts, Brigitte
Mercado-Ayon, Yesica	Butler, Samantha
Mora, Manuel	Braybrook, Siobhan
Ochoa, Chris	Memarzadeh, Sanaz
Roe, Anne	Pyle, April
Bernard, Matt	Goldstein, Andrew
Boone, Brandon	Jacobsen, Steve
Gehred, Natalie	Vondriska, Tom
Han, Jee Yun	Boutros, Paul
Nisson, Karly	Fregoso, Oliver
Wang, Shuya	Jacobsen, Steve
Alonso, Valentina	Hoffmann, Alex
Britton, Timmie	Ton-That, Hung
Franklin, Dana	Ton-That, Hung
Kahangi, Bitta	Dubinett, Steve
Kennewick, Kelly	Bensing, Steve
Pasquarelli, Rebecca	Bradley, Peter
Perez-Reyes, Edgar	Dubinett, Steve
Sun, Angela	Reed, Elaine
Yang, Vivian	Fregoso, Oliver
Pan, Hope	Eisenberg, David
Peyda, Parham	Black, Doug
Uchiyama, Lauren	Tontonoz, Peter
Yoo, Alex	Crooks, Gay

MB-IDP Students Awarded Ph.Ds.

Student	Mentor	Dissertation Title
Hernandez, Gloria	Iruela-Arispe, Luisa	"Aortic intimal resident macrophages are essential for maintenance of the non-thrombogenic intravascular state"
Lopez, Andrew	Fregoso, Oliver	"HIV Vpr Engages the Host DNA Damage Response and Chromatin-Associated Proteome"
Li, Yanruide	Yang, Lili	"Development of Hematopoietic Stem Cell-Engineered Invariant Natural Killer T Cells for Cancer Immunotherapy"
Bowler, Jeannette	Eisenberg, David	"Structural characterization of the functional amyloid protein Orb2A, and evaluation of structure-based inhibitors of amyloid assembly"
Salisbury, Alex	Sallam, Tamer & Tontonoz, Peter	"Regulatory RNAs in cardiometabolic disease"
Lin, Ying	Zipursky, Larry	"Temporal control of gene expression during neural circuit formation"
Riggan, Luke	O'Sullivan, Tim	"Transcriptional control of Natural Killer cells during viral infection"
Chitiashvili, Tsotne	Clark, Amander & Plath, Kathrin	"X chromosome dosage regulation during human early embryonic development"
Nesterenko, Pavlo	Witte, Owen	"Characterizing the T cell immune response through the receptor-ligand interaction"
Fan, Xiaorui	Wohlschlegel, James	"Elucidating Molecular Mechanisms of Iron-Sulfur Protein Maturation Mediated by the Cytosolic Iron-Sulfur Cluster Assembly Pathway"
Deng, Weixian	Plath, Kathrin & Wohlschlegel, James	"Investigating the mechanism of somatic cell reprogramming and Developing methodologies in bottom-up proteomics"
Chang, Patrick	Crooks, Gay	"In vitro generation of antigen-specific, Class I MHC-null, cytotoxic T cells for immunotherapy"
Chau, Anthony	Plath, Kathrin	"Defining the sequence requirements for Xist function in X inactivation"
Lowe, Matt	Clark, Amander	"Epigenetic regulation of primordial germ cell differentiation by PRC2"
Afasizheva, Anya	Plath, Kathrin	"Deciphering the role of XACT in early human development"
Ramirez, Nick	Ton-That, Hung	"Mechanism and Function of Membrane Homeostasis of Sortase Modulated by an Evolutionarily Conserved Protein Involved in Pilus Assembly in Actinobacteria"

Whitcome Pre-doctoral Training Program

The Whitcome Pre-doctoral Training Program supports students in the MB-IDP and BMSB programs, in their 3rd, 4th or 5th year of graduate school. Trainees are eligible for one year of support with possibility for competitive renewal. There are no citizenship restrictions for this program; international students are welcome to apply. The program is competitive and merit based.

Congratulations to the following graduate students, who were selected for the Whitcome Training Program this year:

Awardee	Graduate Program	Thesis Advisor	Department
Atai, Kaiser	MBIDP	Hilary Collier	Molecular, Cell and Developmental Biology
Back, Peter	MBIDP	Peter Bradley	Microbiology, Immunology, and Molecular Genetics
Boone, Brandon	MBIDP	Steven Jacobsen	Molecular, Cell and Developmental Biology
Daly, Allison	MBIDP	Stephen Smale	David Geffen School of Medicine
Damodaren, Nivedita	MBIDP	Kathrin Plath/Douglas Black	Biological Chemistry/Microbiology, Immunology and Molecular Genetics
Deng, Weixian	MBIDP	Kathrin Plath/James Wohlschlegel	Biological Chemistry
DiRusso, Jonathan	MBIDP	Amander Clark	Molecular, Cell, and Developmental Biology
Emami, Michael	MBIDP	Melissa Spencer	Neurology
Flores, Angelina	MBIDP	Amy Rowat	Integrative Biology & Physiology
Gillman, Cody	MBIDP	Tamir Gonen	Physiology & Biological Chemistry
Hildreth, Andrew	MBIDP	Tim O'Sullivan	Microbiology, Immunology, and Molecular Genetics
Ichino, Lucia	MBIDP	Steven Jacobsen	Molecular, Cell and Developmental Biology
Jiang, Sean	MBIDP	David Eisenberg	Biological Chemistry
Kim, Alexander	MBIDP (MSTP)	S. Lawrence Zipursky	Biological Chemistry
Lum, Gregory	MBIDP	Elaine Hsiao	Integrative Biology & Physiology

Nguyen, LeAnn	MBIDP	Melody Li	Microbiology, Immunology, and Molecular Genetics
Pasquarelli, Rebecca	MBIDP	Peter Bradley	Microbiology, Immunology and Molecular Genetics
Sun, Angela	MBIDP	Elaine Reed	Pathology and Laboratory Medicine
Yang, Emily	MBIDP (MSTP)	Melody Li	Microbiology, Immunology and Molecular Genetics
Yu, Kristie	MBIDP (MSTP)	Elaine Hsiao	Integrative Biology & Physiology

MB-IDP Graduate Student Seminars

Modeled after the MBI Interdisciplinary Faculty Seminars, these talks are presented by our graduate students in their third and fifth year within the program. Faculty are not present for the talks, which provides our students with an opportunity to present their research in a relaxed, collegial atmosphere over lunch, and allows for constructive discussion and critique. Some students use this forum as practice for their oral qualifying exam and/or dissertation defense. The seminar series has proven to be a great success due to the format and the enthusiasm of our graduate students. The seminar presentations during the 2021-2022 Academic Year were:

Date	1st Speaker	2nd Speaker
October 6th	Dana Franklin "Friend or foe: Assembly and virulence mechanisms of fusobacterium nucleatum microcompartments"	Alejandro Torres "Glutamine in human embryonic germ lineage spatial patterning"
October 20th	Salena Gallardo "Investigating how BMPs are differentially translated by Smad5 during dorsal spinal cord development"	James Zhen "Structural characterization of herpesvirus envelope glycoproteins"
November 3rd	Cody Gillman "Analysis of a voltage-gated sodium channel in lipids by MicroED"	Vivian Yang "DCAF1: Sampling the cellular buffet"
November 17th	Andrew Lund "Elucidating stem/progenitor identities and lineage relationships in the airway submucosal gland"	Kelly Kennewick "Understanding how host metabolism influences T-cell mediated immunity through regulation of the T cell lipidome"
December 1st	Timmie Britton "Examining the role of an ancient bacterial electron transport system"	Angelina Flores "Defining the role of NUDIX5 in the mechanobiology of ovarian cancer"

	in modulation of fusobacterial pathophysiology”	
December 8th	Brandon Boone “Exploring the biochemical mechanism of DNA methylation mediated gene silencing by the MBD5/6 complex”	Bitta Kahangi “Investigating the role of Neuropilin-1 signaling in the immune functions of CD4 conventional T cells”
January 5th	Hope Pan “Functionalized magnetic nanoparticles for magnetic resonance imaging in Parkinson’s disease”	Jee Yun Han “Comprehensive study of gene expression outliers and their regulation mechanisms in pan-cancer”
January 19th	Shuya Wang “Exploring the mechanism of transcription repression mediated by Arabidopsis methyl-reader MBD2”	Jon DiRusso “Regulation and necessity of transposable elements during mammalian germline development”
February 9th	Lauren Uchiyama “Control of lipid droplet dynamics in hepatocyte”	Chris Ochoa “Contribution of a de-differentiated and stem-like cell population to platinum-resistant ovarian cancer”
February 23rd	Alex Yoo “Generation of T-iPSC derived CAR T cells using the Artificial Thymic Organoid (ATO) system”	Karly Nisson “HIV and Chromatin: Defining the role of Vpr-induced DNA damage in proviral transcription”
March 9th	Yesica Mercado-Ayon “Investigating the cell-type specific function of netrin1 during spinal cord development”	Angela Sun “Mapping NK-like T cell immune response to CMV in renal transplantation”
March 23rd	Parham Peyda “Regulation of alternative splicing by a large assembly of splicing regulators”	Edgar Perez-Reyes) “Investigating the evolution of tumor mutational landscape and associated immune signatures in non-small cell lung cancer MPE.”
April 6th	Tanya Gromova “Epigenetic-Metabolic coupling in heart failure”	
April 27th	Matt Bernard “Assessing the role of TCA cycle rewiring on prostate cancer progression”	
May 4th	Eva Segura “Hematopoietic Stem Cell Gene Addition Therapy for Alpha Thalassemia”	Manny Mora “The role of Arabidopsis thaliana Target of Rapamycin (AtTOR) in regulating plant growth plasticity”

May 18th	Quincy Okobi “Mechanisms of acquired resistance to EGRF targeted therapy in glioblastoma”	Anne Roe “Organoids to Model Developmental Myogenesis”
June 15th	Carlos Galvan “Defining the role of Glutaminolysis in cutaneous Squamous Cell Carcinomas”	Natalie Gehred “Identifying drivers of a pro-fibrotic cell population in cardiac hypertrophy”
June 29th	Maymay Mu “Amino acid sensation and transport by SLC38A9 to activate mTORC1 pathways”	Rebecca Pasquarelli “Investigating novel inner membrane complex proteins involved in the replication of <i>Toxoplasma gondii</i> ”

Conference Participation

Abascal, Jensen

- 2022 American Association for Cancer Research Annual Meeting; New Orleans, Louisiana. April 9-13, 2022. Poster.

Alexander, Noah

- HHMI: Deconstructing and Decoding the Genome; Virtual Meeting. April 19-22, 2022. Attended.

Aragon, Raquel

- 2022 New Directions in Biology and Disease of Skeletal Muscle Conference; Ft. Lauderdale, FL. June 20-23, 2022. Poster.

Atai, Kaiser

- Molecular Biology Institute Annual Retreat; Hybrid. September 8-10, 2021. Poster.

Back, Peter

- Molecular Biology Institute Annual Retreat; Hybrid. September 8-10, 2021. Talk.
- Southern California Eukaryotic Pathogens Conference; Virtual Meeting. October 2021. Talk.
- Parasitology Group Meeting; Virtual Meeting. January 2022. Talk.
- International Toxoplasma Congress (Toxo XVI); Riverside, CA. May 2022. Poster.

Bernard, Matthew

- Molecular, Cell and Developmental Biology Department Retreat; Santa Monica, CA. December 3-4, 2021. Poster.
- 2nd Annual Jonsson Comprehensive Cancer Center Research Retreat; Los Angeles, CA. May 5, 2022. Poster.
- 2nd Metabolism in Health and Disease Conference; Cancun, Mexico. May 13-16, 2022. Poster.

Boone, Brandon

- Molecular Biology Institute Annual Retreat; Hybrid. September 8-10, 2021. Poster.

Cheng, Mandy

- AAI2022 (American Association of Immunologist); Portland, OR. May 6-10, 2022. Talk and Poster.
- NK2022 (Society of Natural Immunity); Bonita Springs, FL. May 13-17, 2022. Poster.

Chen, Xinyuan

- 27th Annual Meeting of the RNA Society; Boulder, CO. May 31-June 5, 2022. Poster.

Cheng, Xinyi

- Presentation from Early Career Researchers – a mini-symposium; Virtual Meeting. March 6, 2022. Attended.

Chien, Peggie

- European Molecular Biology Organization Workshop: Muscle formation, maintenance, regeneration and pathology; Gouvieux, France. April 24-29, 2022. Talk.
- International Society for Stem Cell Research (ISSCR) Annual Meeting; San Francisco, CA. June 15-18, 2022. Poster.

Crowell, Preston

- Molecular, Cell and Developmental Biology Retreat; Santa Monica. December 3-4, 2021. Talk.

Daly, Allison

- Midwinter Conference for Immunologists; Monterey, CA. January 2022. Poster.

Damodaren, Nivedita

- Cold Spring Harbor Laboratory Meeting: Eukaryotic mRNA Processing; Virtual Meeting, August 2021. Poster.

Desai, Heta

- American Society for Mass Spectrometry (ASMS); Minneapolis, MN. June 2022. Poster.

DiRusso, Jonathan

- International Society for Stem Cell Research 2022; San Francisco, CA. June 15-18, 2022. Poster.

Emami, Melissa

- 17th International Zebrafish Conference; Montreal, Canada. June 22-26, 2022. Attended.

Emami, Michael

- 2022 MDA Clinical & Scientific Conference; Virtual Meeting. March 13-16, 2022. Poster.
- 2022 American Society of Gene and Cell Therapy (ASGCT); Hybrid Meeting. May 16-19 2022. Poster and Talk. (Presented by Dr. Melissa J. Spencer)

Flores, Angelina

- Molecular Biology Institute Annual Retreat; Hybrid. September 8-10, 2021. Poster.

Ford, Ian

- Deuel Conference on Lipids; Monterey, CA. March 1-4, 2022. Attended.
- Molecular Biology Institute Annual Retreat; Hybrid. September 8-10, 2021. Talk and Poster.

Franklin, Dana

- UCLA School of Dentistry Research Day Poster Competition; Los Angeles, CA. March 9, 2022. Poster.

Galvan, Carlos

- UCLA Broad Stem Cell Research Center 18th Annual Stem Cell Symposium; Virtual Meeting. January 28, 2022. Poster.
- International Society for Stem Cell Research Annual Meeting; San Francisco, CA. June 15-18, 2022. Poster.
- CSUNposium; Virtual Meeting. April 1, 2022. Poster.
- CSUN Sigma Xi Symposium; Virtual Meeting. May 6, 2022. Poster.
- West Coast Biological Sciences Undergraduate Research Conference; San Diego, CA. April 9, 2022. Poster.

Gibbs, Devin

- Molecular Biology Institute Annual Retreat; Hybrid. September 8-10, 2021. Talk.

Giafaglione, Jenna

- Metabolism in Health and Disease Conference; Cancun, Mexico. May 13-16 2022. Poster
- Jonsson Comprehensive Cancer Center Retreat; UCLA. May 5, 2022. Poster.
- Cancer Metabolism Showcase; Virtual Meeting. April 4. 2022, Poster.
- UCLA Molecular Cellular and Developmental Biology Department Retreat; December 2021. Poster.
- Prostate SPOR Trainee Meeting. December 2021. Talk
- UCLA Molecular Biology Institute Retreat; UCLA. September 2021. Talk.

Gromova, Tatiana,

- American Heart Association Basic Cardiovascular Sciences Conference; Chicago, Illinois. July 25-28, 2022. Poster.
- Department of Anesthesiology and Perioperative Medicine Scientific Evening; Virtual Meeting. March 16, 2021. Poster.

Han, Jee Yun

- Jonsson Comprehensive Cancer Center Retreat; UCLA. May 5, 2022. Poster.

Hebner, Yuki

- UCLA Broad Stem Cell Research Center Symposium; Los Angeles, CA. January 2022. Poster

Hildreth, Andrew

- NK2022: 19th Meeting of the Society for Natural Immunity; Bonita Springs, FL. May 14-17, 2022. Talk and Poster.

Hodge, Rachel

- 63rd Annual Drosophila Research Conference; San Diego, CA. April 6-10, 2022. Talk.
- American Society for Cell Biology Conference; Virtual Meeting. December 2021. Talk and Poster.
- Molecular, Cell and Developmental Biology Retreat; Los Angeles, CA. December 2021. Talk.
- Molecular Biology Institute Annual Retreat; Hybrid. September 8-10, 2021. Talk.

Ichino, Lucia

- Cold Spring Harbor Laboratory Conference; Virtual Meeting. August 2021. Poster.
- Cold Spring Harbor Asia Virtual Pre-Conference; Virtual Meeting. December 13, 2021. Talk.
- Gordon Research Conference & Chromatin Structure and Function (GRS and GRC); Barcelona, Spain. May 28, 2022 - June 3, 2022. Poster.

Jackson, Nicholas

- International Society for Stem Cell Research Annual Meeting; San Francisco, CA. June 15-18, 2021. Poster.

Jih, Jonathan

- 2020-2021 Sigman Symposium; Virtual Meeting. April 15, 2021. Poster.
- 6th SoCal CryoEM Symposium; Virtual Meeting. October 29, 2021. Poster.

Jimenez, Robert

- American Society of Gene and Cell Therapy 25th Annual Meeting; Virtual Meeting. May 16-19, 2022. Attended.
- Muscular Dystrophy Association Annual Conference; Virtual Meeting. March 13-16, 2022. Attended.

Juda, Michal

- Los Angeles Bioscience Ecosystem Summit 2022; Los Angeles, CA. May 26, 2022. Attended.

Kan, Ryan

- Jonsson Comprehensive Cancer Center Research Retreat; Los Angeles, CA. May 5, 2022. Poster.

Kennewick, Kelly

- Gilliam Fellows Annual Meeting; Virtual Meeting. September 19-21, 2021. Poster.

Kim, Alexander

- Molecular Biology Institute Annual Retreat; Hybrid. September 8-10, 2021. Poster.

Kronenberg, Michael

- Jonsson Comprehensive Cancer Center Research Retreat; Los Angeles, CA. May 5, 2022. Poster.

Lee, Derek

- International Society for Stem Cell Research (ISSCR) Annual Meeting; San Francisco, CA. June 15-18, 2022. Attended.

Lim, Han Young

- 27th Annual Meeting of the RNA Society; Boulder, CO. June 2022. Poster.
- 5th Annual City of Hope Biomedical Research Graduate Student Symposium; Virtual Meeting. August 2021. Poster.

- Cold Spring Harbor Laboratory Eukaryotic mRNA Processing; Virtual Meeting. August 2021. Poster.

Li, Joey

- Society for Natural Immunity NK2022 Meeting; Bonita Springs, FL. May 14-17, 2022. Poster.

Li, Yan

- Oligo Therapeutic society Annual Meeting; Virtual Meeting. September 26-29, 2021. Talk.
- Oligo Therapeutic Society Trainee Spotlight Series; Virtual Meeting. July 8, 2022. Talk.

Lin, Luda

- Los Angeles Bioscience Ecosystem Summit 2022; Los Angeles, CA. May 26, 2022. Poster.

Lum, Gregory

- LA Bioscience Ecosystem Summit 2022; Virtual Meeting. May 26, 2022. Poster.
- American Epilepsy Society Annual Conference; Chicago, IL. December 2-7, 2021. Poster and Talk.
- Molecular Biology Institute Annual Retreat; Los Angeles, CA. September 8-10, 2021. Poster.
- LA Bioscience Ecosystem Summit; Virtual Meeting. May 25-27, 2021. Poster.

Lund, Andrew

- Epithelial Stem Cell – Niche Interactions in Lung Development, Homeostasis, Regeneration, and Disease; Virtual Meeting. December 13-15, 2021. Attended.
- ESC Hastings Center for Pulmonary Research Symposium 2022: Cellular & Molecular Bases of Lung Development & Disease; Los Angeles, CA. March 18, 2022. Attended.
- 2nd Annual Markets and Markets Single-Cell Analysis Virtual Conference; Virtual Meeting. November 9-10, 2021. Attended.
- Broad Stem Cell Research Center 18th Annual Stem Cell symposium. Organoids: modeling Development, Disease and Therapies; Virtual Meeting. January 28, 2022. Poster.
- 2022 Cystic Fibrosis Foundation Conference; Renton, WA. June 26-July 1, 2022. Poster.

Luthers, Christopher

- American Society for Gene and Cell Therapy Conference; Washington DC. May 14-19, 2022. Poster.

Morales, Abril

- Molecular Cell Developmental Biology Retreat; Santa Monica, CA. December 3-4, 2021. Poster.
- Neurobehavioral Genetics; Santa Monica, CA. May 12, 2022. Talk.

Mu, Xuelang

- 2022 Virtual Poster Presenter, HHMI Microbes and the Host Response Science meeting

Nadres, Brandon

- UCLA Mitochondria Symposium; Los Angeles, CA. December 9-11, 2021. Talk and Poster.
- Molecular Biology Institute Annual Retreat; Hybrid. September 8-10, 2021.

Nguyen, Huyen Thi Lam

- Neurofibromatosis (NF) Conference; Philadelphia, PA. June 18-21, 2022. Talk.

Nguyen, LeAnn

- American Society for Virology Conference; Virtual Meeting. July 19-23, 2021. Poster.

Nisson, Karly

- Retroviruses, Cold Spring Harbor Laboratories; Cold Spring Harbor, NY. May 23-28, 2022. Poster.

Okobi, Quincy

- Society for Neuro Oncology; Boston, MA. November 2021. Attended.

Pasquarelli, Rebecca

- 16th International Congress on Toxoplasmosis and Toxoplasma gondii Research; Riverside, CA. May 22-26, 2022. Talk.

Peyda, Parham

- Eukaryotic mRNA Processing; Virtual Meeting. August 24-27, 2021. Attended.

Pohl, Katherine

- Los Angeles Bioscience Ecosystem Summit 2022; Los Angeles, CA. May 26, 2022. Attended.
- Ginsburg Symposium in Genomic Medicine: Frontiers in Gene Editing; Los Angeles, CA. May 22, 2022. Attended.
- 5th Annual UCLA Mitochondria Symposium; Los Angeles, CA. December 9-11, 2022.

Ramirez, Nick

- UCLA Microbial Pathogenesis Training Grant Symposium. 2022. Attended.

Rodriguez, Jocelyn

- UCLA Mitochondria Symposium; Los Angeles, CA. December 9-11, 2021. Attended.

Roe, Anne

- New Directions in Biology and Disease of Skeletal Muscle Conference; Virtual Meeting. June 28-July 1, 2021. Attended.

Salladay-Perez, Ivan

- Bay Area Aging Meeting; Berkeley, CA. May 17, 2022. Poster.

Sanchez, Luis

- The Association for Research in Vision & Ophthalmology 2022; Denver, Colorado. May 1-4, 2022. Abstract.

- International Society for Eye Research Bright Focus Glaucoma Symposium; Atlanta, Georgia. May 24-27, 2022. Abstract and Talk.
- The Vision Restoration Summer School; Quebec, Canada. July 24-29, 2022. Abstract and Talk.

Sandoval, Carina

- DNA Damage, Mutation and Cancer Gordon Research Conference; Ventura, CA. March 6-11, 2022. Poster.
- American Society for Virology; Madison, WI. July 15-22. Poster.

Segura, Eva

- American Society Gene and Cell Therapy (ASGCT); Washington DC. May 15-19, 2022. Talk and Poster.
- 12th Stem Cell Clonality and Genome Retreat; Boston, MA. May 19-20, 2022. Talk.

Thind, Amara

- UCLA Parasitology Meeting; Virtual Meeting. January 15, 2021. Talk.
- Molecular Biology Institute Annual Retreat; Hybrid. September 8-10, 2021. Talk.
- Southern California Eukaryotic Pathogen Symposium; Virtual Meeting. October 27, 2021. Poster.
- 16th Biennial International Toxoplasma Congress; Riverside, CA. June 23, 2022. Poster.

Thurlow, Lauren

- Molecular Biology Institute Annual Retreat; Hybrid. September 8-10, 2021. Poster.
- 2021 Molecular, Cell and Developmental Biology Retreat; Santa Monica, CA. December 3-4, 2021. Poster.
- Experimental Biology 2022 Meeting; Philadelphia, PA. April 2-5, 2022. Poster.

Valentine Crisostomo, Ralph

- American Society of Gene & Cell Therapy; Washington DC. May 16-29, 2022. Attended.

Vavilina-Halstead, Anastasia

- International Society for Hematology Annual Conference; Virtual Meeting. August 2021. Talk and Poster.
- Molecular, Cell and Developmental Biology Retreat; Santa Monica, CA. December 2021. Poster.
- International Society for Stem Cell Research Annual Meeting; San Francisco, CA. June 15-18, 2022. Poster.

Williams, Znala

- Molecular Cell Developmental Biology Retreat; Santa Monica, CA. December 3-4, 2021. Poster.

Yang, Emily

- American Society for Virology Annual Meeting; Virtual Meeting. July 19-23, 2021. Talk.

Yang, Vivian

- Cold Spring Harbor Retrovirology; Cold Spring Harbor, NY. May 23-28, 2022. Talk and Poster.

Yu, Kristie

- Keystone Symposium: Neuronal Control of Appetite; Banff, Canada. March 22-24, 2022. Poster.

Zhen, James

- American Crystallographic Association Annual Meeting; Virtual Meeting. July 30-August 5, 2021. Attended.

Zhou, Yang

- International Society for Stem Cell Research; Virtual Meeting. June 21, 2021.
- Jonsson Comprehensive Cancer Center Retreat; UCLA. May 5, 2022. Poster.
- International Society for Stem Cell Research 2022; San Francisco. June 15-18, 2022. Poster.

Student Publications

Alexander, Noah

- Genomic epidemiology of the Los Angeles COVID-19 outbreak and the early history of the B. 1.43 strain in the USA, L Guo, et al., BMC genomics 23 (1), 1-9.

Back, Peter

- Back PS*, O'Shaughnessy WJ*, Moon AS, Dewangan PS, Reese ML+, Bradley PJ+. Multivalent interactions drive the Toxoplasma AC9:AC10:ERK7 complex to concentrate ERK7 in the apical cap. mBio. 2022 Feb 22;13(1).
- Back PS, Moon AS, Bell HN, Pasquarelli RR, Torres JA, Chen AL, Sha J, Vashisht AA, Wohlschlegel JA, Bradley PJ. IMC29 coordinates Toxoplasma replication and reveals new components of the daughter-enriched IMC proteome. mBio (2022). Submitted.

Boone, Brandon

- Ichino L, Boone BA, Strauskulage L, Harris JC, Kaur G, Gladstone MA, Tan M, Feng S, Jami-Alahmadi Y, Duttke SH, Wohlschlegel JA, Cheng X, Redding S, Jacobsen SE. MBD5 and MBD6 couple DNA methylation to gene silencing via the J-domain protein SILENZIO. Science. 2021 06;eabg6130: 10.1126/science.abg6130

Carstens-Kass, Jessica

- Carstens-Kass J, Paulini K, Lypaczewski P, Matlashewski G (2021) A review of the leishmanin skin test: A neglected test for a neglected disease. PLoS Negl Trop Dis 15(7): e0009531. <https://doi.org/10.1371/journal.pntd.0009531>

Chen, Howard

- Wilkinson, N. M., Chen, H. C., Lechner, M. G., & Su, M. A. (2022). Sex Differences in Immunity. Annual review of immunology, 40, 75–94.
- Wang, Y., Guo, L., Yin, X., McCarthy, E. C., Cheng, M. I., Hoang, A. T., Chen, H. C., Patel, A. Y., Allard Trout, D., Xu, E., Yakobian, N., Hugo, W., Howard, J. F., Jr, Sheu, K. M., Hoffmann, A., Lechner, M. G., & Su, M. A. (2022). Pathogenic TNF- α drives peripheral nerve inflammation in an Aire-deficient model of autoimmunity. Proceedings of the National Academy of Sciences of the United States of America, 119(4)

Cheng, Mandy

- Cheng, M.I., Riggan, L., Li, J.H., Yakhshi Tafti, R., Chin, S., Ma, F., Pellegrini, M., Hrncir, H., Arnold, A.P., O'Sullivan, T.E., Su, M.A. Sex differences in NK cells mediated by the X-linked epigenetic regulator UTX. *bioRxiv* 2022.04.21.489076; doi: <https://doi.org/10.1101/2022.04.21.489076>.

Cheng, Xinyi

- Murray, K. A.; Hu, C. J.; Griner, S. L.; Pan, H.; Bowler, J. T.; Abskharon, R.; Rosenberg, G. M.; Cheng, X.; Seidler, P. M.; Eisenberg, D. S. De novo designed protein inhibitors of amyloid aggregation and seeding. *PNAS*.
- Murray, K. A.; Boyer, D. R.; Seidler, P. M.; Ge, P.; Sawaya, M. R.; Hu, C. J.; Cheng, X.; Abskharon, R. A.; Pan, H.; DeTure, M. A.; Williams, C. K.; Dickson, D. W.; Vinters, H. V.; Eisenberg, D. S. Structure-based discovery of small molecules that disaggregate tau fibrils from Alzheimer's disease. *Nature Communications*. (In review)
- Movassaghi, C.; Perrotta, K.; Yang, H.; Iyer, R.; Cheng, X.; Dagher, M.; Alcaniz, M.; Andrews, A. (2021) Simultaneous serotonin and dopamine monitoring across timescales by rapid pulse voltammetry with partial least squares regression. *Anal. Bioanal. Chem.*

Chien, Peggie

- Chien P*, Xi H*, Pyle AD. Recapitulating human myogenesis ex vivo using human pluripotent stem cells. *Exp Cell Res.* 2022;411(2):112990. PMID: PMC8996775 (*co-first)
- Saleh KK, Xi H, Switzler C, Skuratovsky E, Romero MA, Chien P, Gibbs D, Gane L, Hicks MR, Spencer MJ, Pyle AD. Single Cell Sequencing Map of Cellular Diversity as Disease Severity Increases in Dystrophic Mouse Models. *iScience*. 2022. (Under Revision)

Damodaren, Nivedita

- Damodaren, N., Lin, C.H., Yang, H., Jacobson, E., Plath, K., & Black, D.L., Short vs long term effects from depletion of a splicing regulator: identification of early splicing changes after rapid depletion of the RNA-binding protein Matrin-3.

DePaola, Peter

- Chuanqi Sun, Kang Zhou, Peter DePaola IV, Woo Shik Shin, Trae Hillyer, Michael R. Sawaya, Z. Hong Zhou, Lin Jiang. Cryo-EM structure of amyloid fibril formed by α -synuclein hereditary A53E mutation. *bioRxiv* 2022.03.11.483992; doi: <https://doi.org/10.1101/2022.03.11.483992>

Desai, Heta

- SP3-Enabled Rapid and High Coverage Chemoproteomic Identification of Cell-State-Dependent Redox-Sensitive Cysteines <https://doi.org/10.1016/j.mcpro.2022.100218>
- SP3-FAIMS enabled high throughput quantitative profiling of the cysteinome (Current Protocols, accepted)

Dimapasoc, Melanie

- Stone M, Rosenbloom DIS, Bacchetti P, Deng X, Dimapasoc M, Keating S, Bakkour S, Richman DD, Mellors JW, Deeks SG, Lai J, Beg S, Siliciano JD, Pagliuzza A, Chomont N, Lackman-Smith C, Ptak RG, Busch MP. Assessing the Suitability of Next-Generation Viral Outgrowth Assays to Measure Human Immunodeficiency Virus 1 Latent Reservoir Size. *J Infect Dis.* 2021 Oct 13;224(7):1209-1218. <https://doi.org/10.1093/infdis/jiaa089>.
- Kim JT, Zhang TH, Carmona C, Lee B, Seet CS, Kostelny M, Shah N, Chen H, Farrell K, Soliman MSA, Dimapasoc M, Sinani M, Blanco KYR, Bojorquez D, Jiang H, Shi Y, Du Y, Komarova NL, Wodarz D, Wender PA, Marsden MD, Sun R, Zack JA. Latency reversal plus natural killer cells diminish HIV reservoir in vivo. *Nat Commun.* 2022 Jan 10;13(1):121. <https://doi.org/10.1038/s41467-021-27647-0>.

Elahi, Lubayna

- Momoko Watanabe, Ph.D.; Jillian R. Haney; Neda Vishlaghi; Jessie E. Buth; Felix Turcios; Lubayna S. Elahi; Wen Gu; Amanda J. Collier; Osvaldo A. Miranda; Natassia Dunn; Di Chen; Shan Sabri; Amander T. Clark; Kathrin Plath; Heather R. Christofk; Michael J. Gandai; Bennett Novitch, Ph.D. "TGF β superfamily signaling regulates the state of human stem cell pluripotency and competency to create telencephalic (In review Stem Cell Reports)
- Matthew C. Garrett M.D.,Ph.D., Rebecca Albano Ph.D., Troy Carnwath B.S. b , Lubayna Elahi B.S. c, Catherine Behrman d , Merissa Pemberton d , Daniel Woo M.D. e , Eric O'Brian f , Sanjit Shah M.D. a , Matthew, Hagan M.D. g , Ady Kendler M.D. g , Chuntao Zhao Ph.D. f , Richard Lu Ph.D. g , Aditi Paranjpe Ph.D. h , Krishna, Roskin Ph.D. h , Harley Kornblum M.D.,Ph.D. c , David Plas Ph.D. d. HDAC1 and HDAC6 are essential for driving growth in IDH1 mutant glioma (Submitted, Scientific Reports)

Evans, Declan

- H.-W. Yeh, C. Norn, Y. Kipnis, D. Tischer, S. J. Pellock, D. Evans, P. Ma, G. R. Lee, J. Z. Zhang, I. Anishchenko, B. Coventry, L. Cao, S. Halabiya, M. DeWitt, L. Carter, K. N. Houk, and D. Baker, De novo design of a highly active and specific luciferase, *Nature*, In Review

- M. C. Andorfer‡, D. Evans‡, S. Yang, C. Q. He, A. M. Girlich, J. Vergara-Coll, N. Sukumar, K. N. Houk, and J. C. Lewis, Analysis of Laboratory-Evolved Flavin-Dependent Halogenases Affords a Computational Model for Predicting Halogenase Site Selectivity, *Chem Catalysis*, In Press
- I. Benavides, E. D. Raftery, A. G. Bell, D. Evans, W. A. Scott, K. N. Houk, and T. J. Deming, Poly(dehydroalanine): Synthesis, Properties, and Functional Diversification of a Fluorescent Polypeptide, *J. Am. Chem. Soc.* 2022, 144, 9, 4214–4223
- K. A. Murray‡, D. Evans‡, M. P. Hughes, M. R. Sawaya, C. J. Hu, K. N. Houk, and D. Eisenberg, Extended β -Strands Contribute to Reversible Amyloid Formation, *ACS Nano* 2022, 16, 2, 2154–2163
- W. A. Scott, E. G. Gharakhanian, A. G. Bell, D. Evans, E. Barun, K. N. Houk, and T. J. Deming, Active Controlled and Tunable Coacervation Using Side-Chain Functional α -Helical Homopolypeptides, *J. Am. Chem. Soc.* 2021, 143, 43, 18196–18203

Freeland, Jack

- Freeland J, Crowell PD, Giafaglione JM, Boutros PC, Goldstein AS. Aging of the progenitor cells that initiate prostate cancer. *Cancer Lett.* 2021 Sep 1;515:28-35. Doi: 10.1016/j.canlet.2021.05.014. Epub 2021 May 28. PMID: 34052326; PMCID: PMC8494000.

Gallardo, Salena

- S. Gupta, R. Kawaguchi, S. Gallardo, S. Castellanos, I. Mandric, and S. J. Butler In vitro recapitulation of dorsal spinal cord development reveals Wnt signaling as a regulator of interneuron population size. Accepted, *Cell Reports*

Gehred, Natalie

- *Gromova T, *Gehred N, Vondriska TM. Single-cell transcriptomes in the heart: when every epigenome counts. *Cardiovasc Res.* 2022; PMID 35325060

Jiang, Sean

- Jiang, Y., Cao, Q. †, Sawaya, M.R., Abskharon, R., Ge, P., DeTure, M., Dickson, D.W., Fu, J.Y., Ogorzalek Loo, R.R., Loo, J.A., Eisenberg, D.S. Amyloid fibrils in disease FTLD-TDP are composed of TMEM106B not TDP-43. *Nature* 605, 304–309 (2022). DOI: <https://10.1038/s41586-022-04670-9>. PMID: 35344984.

Jih, Jonathan

- C Ho, J Jih, M Lai, X Li, D Goldberg, J Beck, and ZH Zhou (2021). Native structure of the RhopH complex, a key determinant of malaria parasite nutrient acquisition. *PNAS*, 118(35):e2100514118. PMCID: PMC8536402. DOI: 10.1073/pnas.2100514118.

Juda, Michal

- Christopher Dunham, Madelynn E. Mackenzie, Haruko Nakano, Alexis R. Kim, Michal B. Juda, Atsushi Nakano, Adam Z. Stieg, and James K. Gimzewski. (2022) Pacemaker translocations and power laws in 2D stem cell-derived cardiomyocyte cultures. Plos One. <https://doi.org/10.1371/journal.pone.0263976>

Kahangi, Bitta

- Single-cell characterization implicates early suppression of immunosurveillance in the spectrum of lung adenocarcinoma. Submitted.

Kan, Ryan

- Yang et al. (2022), The role of ZAP and TRIM25 RNA binding in restricting viral translation. Frontiers in Cellular and Infection Microbiology, section Microbes and Innate Immunity.
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