

WEINSTEIN

Cardiovascular Development & Regeneration



San Diego, California
May 4-6, 2023
weinstein-conferences.org

University of California, San Diego
Sanford Burnham Prebys Medical Discovery Institute
San Diego State University

MEETING SPACE





We are delighted to welcome you to the 2023 Weinstein Cardiovascular Development & Regeneration Conference! Following up on the tremendous success of the 2022 Weinstein Conference in Marseille, we are excited to convene a diverse and interactive group of colleagues to share important scientific discoveries, celebrate the accomplishments of young investigators, and create collaborations that will facilitate future innovations.

Building on the long-standing tradition of the Weinstein Conference, all of the speakers in our platform presentation sessions have been selected from the submitted abstracts, and we have prioritized the selection of abstracts presented by graduate students, postdoctoral fellows, and early career faculty. An abundance of additional exciting abstracts will be presented in our poster sessions, and all posters will be available to view throughout the conference. We are also fortunate to be able to enjoy talks from two vibrant Keynote Lecturers: Dr. Xin Sun (UCSD), whose research focuses on the fundamental mechanisms controlling lung development and disease, and Dr. Hanna Mikkola (UCLA), whose research investigates the pathways regulating hematopoietic stem cell formation and self-renewal. An additional session will share information on NIH-sponsored opportunities and resources, and our annual business meeting will discuss plans for future conferences.

Please enjoy this special opportunity to be inspired by each other's science, to receive valuable feedback, and to encourage newer members of our community to continue forging ahead.

Warmly,
The 2023 Weinstein Conference Organizing Committee

Keynote Lecturers

Xin Sun, PhD
University of California, San Diego

Keynote Lecture I, Thursday, May 4, 5:30 pm:
“United and vital: Lung as a sensory organ in partnership with heart”

Dr. Xin Sun is a Professor of Pediatrics and Biological Sciences at University of California, San Diego. She obtained her Ph.D. at Yale University and conducted postdoctoral training at University of California, San Francisco. The Sun lab studies lung development, stem cells, lung disease mechanisms, as well as lung, neural and immune crosstalk. The team uses CRISPR/Cas9 genome editing to generate genetic mouse models of human diseases to interrogate disease mechanisms. Dr. Sun leads a research center under the LungMAP consortium to generate open-source single cell transcriptomic and epigenomic datasets of the newborn-pediatric-adult human lung for the community. Dr. Sun has also served as a Director of the Cold Spring Harbor Mouse Development, Stem Cells and Cancer course. In her keynote lecture, she will discuss how the lung, with its intimate connections to the heart, develops and functions in response to cues.



Hanna Mikkola, MD, PhD
University of California, Los Angeles

Keynote Lecture II, Friday, May 5, 4:30 pm:
“Deciphering the path from hemogenic endothelium to self-renewing human hematopoietic stem cells”

Dr. Hanna Mikkola is a Professor of Molecular Cell and Developmental Biology at University of California Los Angeles. She obtained M.D. and Ph.D. degrees in 1997 from the University of Helsinki, Finland, and did her post-doctoral training in Lund University, Sweden, and Dana-Farber Cancer Institute, Harvard Medical School, in Boston. In 2005 Hanna joined UCLA where her lab has focused on understanding cell intrinsic and extrinsic mechanisms governing HSC development and self-renewal, and how these mechanisms become imbalanced during HSC culture or leukemic transformation. Her lab uses human pluripotent stem cells and developmental and adult hematopoietic tissues combined with molecular biology, genomic and cutting-edge single cell- and spatial transcriptomic technologies to address these questions. In her keynote lecture, she will go through the journey of human HSC development through the lens of single cell “omics”, and illuminate how human HSCs emerge from unique hemogenic endothelial progenitors and complete their functional maturation to self-renewing, transplantable HSCs.



Conference Sponsors

We are extremely grateful for the generous support of our conference sponsors. Their collective efforts have made our 2023 Weinstein Conference possible.

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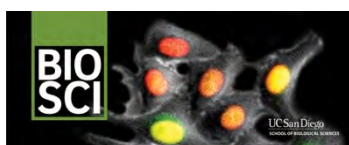
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2023 Weinstein Cardiovascular Development and Regeneration Conference Organizing Committee:

University of California, San Diego: Ju Chen, Neil Chi, Sylvia Evans, Emma Farley, Paul Grossfeld, Stephanie Lindsey, Bob Ross, Farah Sheikh, Deborah Yelon

Sanford Burnham Prebys Medical Discovery Institute: Rolf Bodmer, Alex Colas, Karen Ocorr

San Diego State University: Richard Cripps

History of the Weinstein Conference

Constance De Courcy, born in 1935, graduated with a PhD in Biochemistry in London before moving to USA in 1955, where she later married Howard Weinstein. After 15 years of research, Constance Weinstein moved to NIH and NHLBI in 1970. As early as 1983, among many fields of research, she became particularly interested in cardiac developmental biology. Connie invited a small number of scientists (Frank Manasek, from Harvard, Donald Fischman, from Cornell Medical College, Glenn Rosenquist, from Nebraska, and Ed Clark, from Johns Hopkins, all funded by R01 grants and working in this research area) to Washington DC to write a Request for Applications.



*Constance Weinstein – NHLBI deputy division director (Cardiac Functions Branch)
Photo of Howard and Constance Weinstein by courtesy of Roger Markwald*

In 1984, the first RFA “Fundamental Studies of Cardiac Morphogenesis” was published followed by annual meetings for all grantees between 1986 and 1993. In 1994, a first post-RFA grantees meeting took place in Charleston. It was then decided to organize these meetings on an annual basis and call them the “Weinstein Meeting”.

The first Weinstein meeting thus took place in Rochester (NY state) in 1995. The chairmen and chairwomen were Charlie Little, Donald Fischman, Tom Doetschman, Thomas Pexieder, Lou Terracio, Ray Runyan, Ed Clark, Roger Markwald and Adriana Gittenberger-De Groot, all exceptional scientists who have contributed to the success of the Weinstein conferences.

For 10 years, the meeting took place once a year in the USA. In 2004, the Weinstein meeting became international once every 4 years (first organized in Leiden, then Amsterdam in 2010, Madrid in 2015 and Nara, Japan, in 2018). The 2019 Weinstein meeting, hosted in Indianapolis, was the last meeting to be held before the Covid-19 pandemic restricted in-person conferences. The international Weinstein Committee, comprised of previous, present and future meeting organizers as well as two at-large elected members, established a series of online webinars between December 2020 and June 2021. These meetings, hosted by Debbie Yelon, allowed junior investigators present their exciting results and were very well attended with extensive discussion. These webinars played an important part in maintaining the spirit of the Weinstein community during the pandemic. In 2022, the community was delighted to reunite at an in-person Weinstein Conference in Marseille, in the South of France. In 2023, we are thrilled to continue the Weinstein tradition in San Diego, California.

Weinstein Conference Charter

SCOPE OF THE CONFERENCE

The Weinstein Cardiovascular Development and Regeneration Conference is an annual, free-standing meeting unaffiliated with any society or parent organization. The meeting is designed for researchers investigating normal and abnormal development of the heart and vasculature, as well as regeneration of cardiovascular tissue. True to the vision of Dr. Constance Weinstein, who first organized this conference, the goal is to promote a collegiate environment for dissemination and discussion of innovative scientific findings, and encourage interactions and collaborations in order to improve patient outcome. A second important mission of the Weinstein Conference is to support and foster the next generation of scientists, including underrepresented minorities and women in the field.

The Weinstein Committee.

In order to provide continuity and maintain the quality of the conference, the participants of the 1998 meeting voted to form an organizing committee called the «Weinstein Committee». The makeup of the committee is composed of:

- a) A single representative from each of the three previous local organizing committees
 - b) A single member from the current host site local organizing committee. This person will serve as Chair of the Committee during the year prior to their meeting.
 - c) A single representative from each of the next two proposed meeting sites.
 - d) Two «At-Large» members, who are selected by a vote by the conference participants. These committee members will serve a three-year term.
- Any institution should have a maximum of one member serving on the Weinstein Committee at any given time.

Committee members serve to assist the local organizing committee with conference arrangements, to help secure funding, and to solicit and vet nominations for future meeting sites and host institutions.

Hosting the annual Weinstein Conference.

Interested individuals or groups from host institutions from within, and outside the USA organize the Weinstein meeting on a rotating, voluntary basis. Prospective host institutions should bid to host a future Weinstein meeting three years prior to the year that they desire to host the meeting. To do this, prospective host institutions should submit a preliminary application to the Weinstein Committee at least one month prior to bidding to host a future meeting. The preliminary application should contain details of:

- a) The prospective local organizing committee (see below). It is strongly encouraged that at least two Faculty are identified, per site, to support the meeting from bid stage.
- b) The prospective site for the meeting
- c) A secure fundraising plan (institutional support and/or external support).

The purpose of early submission of a preliminary application is to allow the committee members to resolve any potential issues or missing details prior to presentation at the annual Weinstein meeting and vote at the annual business meeting.

The Weinstein Committee will evaluate all bids for feasibility to host the conference effectively in terms of fundraising and organizational and scientific capacity, and committee members will vote by proxy (led by The Chair of the Committee). Once approved by The Weinstein Committee, a maximum of three bids will be presented at the annual Weinstein meeting and put to vote the following day by all conference attendees at the annual business meeting.

Meeting sites will be selected by vote such that the future local organizing committee will have a three-year lead-time. The Weinstein Committee may solicit additional applications from prospective host institutions as needed. In the event that multi-year funding is sought from the National Institutes of Health or other national sources, the Weinstein Committee will participate in this process.

LOCAL ORGANIZING COMMITTEE

To provide a varied flavor and the opportunity for new, innovative themes in cardiovascular research, each host institution will form a local organizing committee that will be responsible for securing a meeting venue, developing a meeting program and fundraising to cover meeting expenses. In consideration of venue and program, the organizing committee should consider creating opportunities for informal communication and interaction, and minimize cost for attendees. In consideration of the program, the organizing committee are encouraged to support exposure of junior investigators, underrepresented minorities and women. This representation should occur at the level of the organizing committee, program chairs, and presenters.

OBLIGATIONS OF THE PARTICIPANTS

One of the most important aspects of the Weinstein Conference has been the willingness of the participants to share new and unpublished information. This has provided opportunities for the participants to devise new experiments and develop new hypotheses in a collaborative manner. It is expected that all participants will participate in a collegial and ethical manner with respect to information obtained at the Weinstein Conference. Permission should be obtained before disclosure of another investigator's unpublished data.

Similarly, investigators pursuing similar experiments should inform a presenter if the divulged information has a bearing on their own work. All participants in the conference should be willing to share their expertise and reagents in the collective advancement of the area of cardiovascular development.

ANNUAL BUSINESS MEETING

Each Weinstein Conference will include time set aside for a business meeting and time for a subsequent vote on a future conference site by conference participants. At the Business Meeting, Weinstein Committee members may consider changes in the direction of the conference or its organization. At the 1999 meeting in Tucson, Arizona, an original Charter was distributed to the participants and ratified. The Charter was subsequently revised and updated following the 2011 Weinstein Meeting in Cincinnati and then ratified by the Weinstein Committee at the 2012 Weinstein Business Meeting in Chicago. Additional updates and modifications of the Weinstein Charter were made following the 2018 Weinstein Meeting in Nara, Japan and then ratified by the Weinstein Committee at the 2019 Weinstein Meeting in Indianapolis. The Charter will remain in effect until modified by a vote of the Weinstein Committee at the annual business meeting.

Weinstein Committee and Hosts

Weinstein Committee

- Gregor Andelfinger, M.D., Ph.D., CHU Sainte Justine (term ends 2027)
Organizer, 2020 Weinstein Conference (canceled) and 2024 Weinstein Conference
- Anthony Firulli, Ph.D., Indiana University School of Medicine (term ends 2024)
Organizer, 2019 Weinstein Conference
- Sigolène Meilhac, Ph.D., Imagine and Pasteur Institutes (term ends 2025)
At-Large Member
- Michaela Patterson, Ph.D., Medical College of Wisconsin (term ends 2027)
Organizer, 2025 Weinstein Conference
- Ian C. Scott, Ph.D., University of Toronto (term ends 2027)
Organizer, 2020 Weinstein Conference (canceled) and 2024 Weinstein Conference
- Kimara Targoff, M.D., Columbia University (term ends 2023)
At-Large Member
- Deborah Yelon, Ph.D., University of California, San Diego (term ends 2026)
Organizer, 2023 Weinstein Conference
- Stéphane Zaffran, Ph.D. Aix Marseille Université (term ends 2025)
Organizer, 2022 Weinstein Conference

Weinstein Conference Host Institutions and Sites

- Medical University of South Carolina (Charleston, 1994)
- University of Rochester (Rochester, 1995)
- University of Pennsylvania (Philadelphia, 1996)
- University of Cincinnati (Cincinnati, 1997)
- Vanderbilt University (Nashville, 1998)
- University of Arizona (Tucson, 1999)
- Washington University (St. Louis, 2000)
- University of Texas, Southwestern Medical School (Dallas, 2001)
- University of Utah (Salt Lake City, 2002)
- Harvard University (Cambridge, 2003)
- Leiden University (Leiden, Netherlands, 2004)
- University of Arizona (Tucson, 2005)
- University of South Florida (Tampa/St. Petersburg, 2006)
- Indiana University School of Medicine (Indianapolis, 2007)
- Texas A&M University (Houston, 2008)
- University of California, San Francisco (San Francisco, 2009)
- University of Amsterdam, Netherlands (Amsterdam, 2010)
- University of Cincinnati (Cincinnati, 2011)
- University of Chicago (Chicago, 2012)
- University of Arizona (Tucson, 2013)
- Centro Nacional de Investigaciones Cardiovasculares (Madrid, 2014)
- Boston Children's Hospital (Boston, 2015)
- Duke University, Durham (North Carolina, 2016)
- Nationwide Children's Hospital (Columbus, 2017)
- National Cerebral and Cardiovascular Centre & Keio University School of Medicine (Nara, 2018)
- Indiana University (Indianapolis, 2019)
- Aix Marseille Université (Marseille, 2022)

General Announcements

PLATFORM PRESENTATIONS AND AWARDS

All speakers should visit the audiovisual table in the Sunset Ballroom to upload their presentations in advance of their session. Morning speakers should upload their presentations before 8:00 am on the day of their presentation. Afternoon speakers should upload their presentations before 1:30 pm on the day of their presentation. Both PC and Mac formats, using Powerpoint and Keynote applications, are supported. Each platform presenter will receive a maximum of 15 minutes for their presentation, followed by a maximum of 5 minutes for questions. Timing will be strictly enforced. Speakers present only their talks and do not present accompanying posters. Awards for top platform presentations will be announced at the banquet on Saturday, May 6.

POSTER PRESENTATIONS AND AWARDS

Posters can be a maximum of 4 feet high and 6 feet wide. All posters will be displayed throughout the meeting, so please hang your poster up before the first poster session begins on Thursday, May 4. Posterboard numbers correspond to the abstract numbers listed in this book. Odd numbered posters will be presented during the first poster session on Thursday, May 4. Even numbered posters will be presented during the second poster session on Friday, May 5. Posters can be viewed at any time, so please take advantage of available breaks in the schedule in order to absorb more poster content. Posters need to be taken down by 2:00 pm on Saturday, May 6. Awards for top poster presentations will be announced at the banquet on Saturday, May 6.

MEALS AND BANQUET

Breakfasts on Friday and Saturday, lunches on Friday and Saturday, coffee breaks on Thursday, Friday, and Saturday, and poster session refreshments on Thursday and Friday are all included in your registration fees. The welcome reception accompanying the first poster session on Thursday, May 4, should serve as a light dinner; however, the poster session on Friday, May 5, will be accompanied only by smaller snacks, and you'll have dinner on your own after that. The banquet on Saturday, May 6, requires a banquet ticket, which can be purchased through our registration website. The banquet will feature dinner, award presentations, and live music provided by Heather Nation and her band.

COVID SAFETY

While COVID levels are currently low in our community, we care about your health and safety and encourage you to take any precautions that enhance your comfort and enjoyment of the conference. Outdoor seating will be available for all meals. Wearing a mask is an excellent way to protect your health during platform sessions and when viewing posters, but mask-wearing is not required.

2023 Travel Awards

The generosity of our sponsors has facilitated 55 travel awards for participants in the 2023 Weinstein Cardiovascular Development and Regeneration Conference. Each awardee will receive \$500 to defray their expenses related to conference attendance. Selection of each sponsor's travel awards was driven by sponsor-specific strategies, motivated by our sponsors' desires to support excellence of submitted abstracts, focus of submitted abstracts on particular topics, membership in the Society of Developmental Biology, and participation of women, members of underrepresented groups, and individuals with disabilities in the Weinstein Conference. Additional presentation awards, to reward outstanding platform and poster presentations, will be announced at the banquet on May 6.

Additional Ventures generously sponsored travel awards for these recipients:

Ilaria Aurigemma, Laura Bell, Andreia Bernardo, Joseph Bisson, Marie-Victoire Cosson Sjothun, Alison Deyett, Jenna Drummond, Shaohai Fang, Ian Fernandes, Hananeh Fonoudi, Daniela Fuller, Clara Guijarro, Simon Haendeler, Swetansu Hota, Jessica Hou, Jihyun Jang, Elsa Lawrence, Shunyao Lei, Michaela Lynott, Jonathon Muncie, Warlen Pereira Piedade, Mong Lung Steve Poon, Bethany Radford, AnnJosette Ramirez, Bhavana Shewale, Wei Shi, Joshua Theisen, Veronica Uribe Sokolov, Victor Velecela, Mingkun Wang

NIH/NHLBI generously sponsored travel awards for these recipients:

Kaelin Akins, Cecilia Arriagada, Talita Choudhury, Lydia Djenoune, Hailey Edwards, Brittany Gonzalez, Chiemela Ohanele, Mira Pronobis, Anupama Rao, Lijie Shi, Rabina Shrestha, Tarsha Ward

Society for Developmental Biology generously sponsored travel awards for these recipients:

Ian Begeman, Tiffany Duong, James Emerson, Shannon Erhardt, Yao Wei Lu, Hannah Moran, Rebecca Salamon, Felicia Wranitz

Sanford Burnham Prebys Medical Discovery Institute generously sponsored travel awards for these recipients:

Claudio Cortes, Clarisabel Garcia Rodriguez, Mint Htun, Agatha Ribeiro da Silva, Miquel Sendra

Conference Code of Conduct

This conference is supported in part by the National Heart, Lung, and Blood Institute under the award 1 R13 HL168971-01. Additional support is provided by the University of California, San Diego. Both conference sponsors strongly support the establishment of concrete policies for promoting a safe and respectful conference environment.

Statement of commitment

The University of California, San Diego (UCSD) is committed to maintaining a community dedicated to the advancement, application and transmission of knowledge and creative endeavors through academic excellence, where all people who participate in UCSD-sponsored programs and activities can work and learn together in an atmosphere free of harassment, exploitation, or intimidation. Sexual violence, sexual harassment, retaliation, and other behavior prohibited by this policy interfere with those goals. UCSD will respond promptly and effectively to reports of such conduct. This includes action to stop, prevent, correct, and when necessary, discipline, behavior that violates our policies.

Expectations of behavior

UCSD has general policies prohibiting harassment and discrimination on the basis of protected categories. Attendees of events organized by UCSD are expected to behave in accordance with UCSD policies, including:

The UC Policy on Discrimination, Harassment, and Affirmative Action in the Workplace and the UC Nondiscrimination Policy Statement: UCSD prohibits discrimination against any person on the basis of race, color, national origin, religion, sex, gender, gender expression, gender identity, gender transition status, pregnancy, physical or mental disability, medical condition (cancer-related or genetic characteristics), genetic information (including family medical history), ancestry, marital status, age, sexual orientation, citizenship, or service in the uniformed services, including protected veterans.

The UC Policy on Sexual Violence and Sexual Harassment (SVSH): UCSD sets expectations for individual conduct that will ensure an equitable and inclusive environment, free of sexual violence and sexual harassment. Prohibited conduct includes sexual assault, sexual harassment, relationship violence, stalking, invasion of sexual privacy, sexual exploitation and retaliation against anyone reporting or participating in an SVSH process.

The Guidelines for Preventing and Responding to Faculty Bullying and Other Demeaning & Disruptive Behavior: UCSD promotes and maintains a culture in which it is clear that bullying and other demeaning and disruptive behavior are contrary to its norms and expectations and, thus, cannot be condoned or tolerated.

The UCSD Principles of Community:

- We value each member of the community for their individual and unique talents, and applaud all efforts to enhance the quality of campus life. We recognize that each individual's effort is vital to achieving our goals.
- We affirm each individual's right to dignity and strive to maintain a climate of justice marked by mutual respect for each other.
- We value cultural diversity because it enriches our lives. We celebrate this diversity and support respect for all cultures.
- We are a community that adapts responsibly to cultural differences among us.
- We acknowledge that our society carries historical and divisive biases based on race, ethnicity, sex, gender identity, age, disability, sexual orientation, religion, and political beliefs. Therefore, we seek to foster understanding and tolerance among individuals and groups, and we promote awareness through education and constructive strategies for resolving conflict.
- We reject acts of discrimination based on race, ethnicity, sex, gender identity, age, disability, sexual orientation, religion, and political beliefs, and, we will confront and appropriately respond to such acts.
- We affirm the right to freedom of expression. We promote open expression of our individuality and our diversity within the bounds of courtesy, sensitivity, confidentiality, and respect.
- We are committed to the highest standards of civility and decency toward all. We are committed to promoting and supporting a community where all people can work and learn together in an atmosphere free of abusive or demeaning treatment.
- We are committed to the enforcement of policies that promote the fulfillment of these principles.

How to confidentially report alleged violations of the expectations of behavior

Alleged violations of any of the expectations of behavior for conference attendees should be reported to the conference organizers. These reports can be made directly in person, can be sent to the email addresses of any organizer, or can be sent to the email address weinstein.conference@gmail.com. Organizers will assess allegations and the consequences for those who are found to violate the expectations of behavior in consultation with the UCSD Office for Prevention of Harassment and Discrimination (OPHD). The OPHD is the campus Title IX Office that responds to and resolves reports of harassment and discrimination that are related to protected class and civil rights policies, including reports of sexual violence and sexual harassment.

Other options for lodging concerns or complaints related to harassment or discrimination

Since this conference is supported in part by the NIH, individuals who have questions, concerns, or complaints related to harassment, discrimination, or other forms of inappropriate conduct are encouraged to contact the HHS Office for Civil Rights (OCR). Information about how to file a complaint with the HHS OCR and what to expect can be found on the Filing a Civil Rights Complaint page of the HHS OCR website. When contacting the HHS OCR, please name the institution hosting the event as UCSD. Please note that lodging a complaint with the conference organizers is not required before filing a complaint of discrimination with other offices, including OPHD, law enforcement, or the HHS OCR.

Program Overview

Thursday, May 4, 2023

10:00 am	Registration begins	Sunset Foyer
1:45-2:00 pm	Opening Remarks	Sunset Ballroom
2:00-3:40 pm	Platform Session I: Cardiac Regeneration	Sunset Ballroom
3:40-4:10 pm	Coffee Break	Sunset Deck
4:10-5:30 pm	Platform Session II: Cardiac Maturation & Growth	Sunset Ballroom
5:30-6:30 pm	Keynote Lecture I: Dr. Xin Sun, Ph.D. "United and vital: Lung as a sensory organ in partnership with heart"	Sunset Ballroom
6:30-8:30 pm	Poster Session I and Welcome Reception	Sunset Pavilion

Friday, May 5, 2023

6:30-8:00 am	Breakfast	Sunset Terrace
8:00-10:00 am	Platform Session III: Single Ventricle Defects	Sunset Ballroom
10:00-10:30 am	Coffee Break	Sunset Deck
10:30-12:10 pm	Platform Session IV: Tissue Engineering & Mechanisms of Differentiation	Sunset Ballroom
12:00-1:30 pm	Lunch	Sunset Terrace
1:30-2:00 pm	Special Session: NIH Opportunities & Resources	Sunset Ballroom
2:00-4:00 pm	Platform Session V: Patterning & Morphogenesis	Sunset Ballroom
4:00-4:30 pm	Coffee Break	Sunset Deck
4:30-5:30 pm	Keynote Lecture II: Dr. Hanna Mikkola, M.D. Ph.D. "Deciphering the path from hemogenic endothelium to self-renewing human hematopoietic stem cells"	Sunset Ballroom
5:30-7:30 pm	Poster Session II and Snacks	Sunset Pavilion
7:30 pm	Dinner on your own	

Saturday, May 6, 2023

6:30-8:00 am	Breakfast	Sunset Terrace
8:00-9:40 am	Platform Session VI: Cardiac Regeneration & Conduction	Sunset Ballroom
9:40-10:10 am	Coffee Break	Sunset Deck
10:10-11:50 am	Platform Session VII: Mechanisms of Congenital Heart Disease	Sunset Ballroom
12:00-1:30 pm	Lunch	Sunset Terrace
1:30-2:00 pm	Weinstein Conference Business Meeting	Sunset Ballroom
2:00-4:00 pm	Platform Session VIII: Valves & Vessels	Sunset Ballroom
4:00-4:30 pm	Coffee Break	Sunset Deck
4:30-5:30 pm	Platform Session IX: Trabeculation	Sunset Ballroom
5:30-5:45 pm	Closing Remarks	Sunset Ballroom
7:00-10:00 pm	Farewell Banquet and Awards	Paradise Terrace

Full Schedule

Thursday, May 4, 2023

1:45-2:00 pm Opening Remarks

2:00-3:40 pm **Platform Session I: Cardiac Regeneration**
Chairs: Caroline Burns (Boston Children's Hospital) and Neil Chi (University of California, San Diego)

- 1. Transient formation of P-body-like Ddx61 condensates guides heart regeneration**
Mira Pronobis, Siyun Lee, Jianhong Ou, Kenneth Poss
- 2. Investigating variants of Hdac7 in mammalian heart regeneration**
Tyler Buddell, Alexandra Purdy, Xiangwen Peng, Mary Kolell, Samantha Swift, Michael Flinn, Samantha Paddock, Caitlin O'Meara, Michaela Patterson
- 3. Activated epicardial cells promote collagen resolution by mediating reparative macrophages during zebrafish heart regeneration**
Jisheng Sun, Elizabeth Peterson, Xin Chen, Jinhua Wang
- 4. Cross-species single-cell comparison of systemic and cardiac inflammatory responses after cardiac injury**
Eric Cortada, Jun Yao, Yu Xia, Friederike Dündar, Paul Zumbo, Boris Yang, Alfonso Rubio-Navarro, Björn Perder, Miaoyan Qiu, Anthony Pettinato, Edwin Homan, Lisa Stoll, Doron Betel, Jingli Cao, James Lo
- 5. Identifying novel cardiac regeneration enhancers by utilizing computational analyses and transgenic assays**
Ian Begeman, Steffani Manna, Shikha Vashisht, Cecilia Winata, Junsu Kang

3:40-4:10 pm Coffee Break

4:10-5:30 pm **Platform Session II: Cardiac Maturation & Growth**
Chairs: Ju Chen (University of California, San Diego) and Michaela Patterson (Medical College of Wisconsin)

- 6. Epigenetic mechanisms regulating cardiogenesis and postnatal cardiomyocyte cell cycle withdrawal**
Paola Cattaneo, Michael Hayes, Nina Baumgarten, Dennis Hecker, Sofia Peruzzo, Galip Aslan, Paolo Kunderfranco, Veronica Larcher, Lunfeng Zhang, Riccardo Contu, Gregory Fonseca, Simone Spinozzi, Ju Chen, Gianluigi Condorelli, Stefanie Dimmeler, Marcel Schulz, Sven Heinz, Nuno Camboa, Sylvia Evans

7. **m6A mRNA modifications regulate embryonic heart maturation**
Shunyao Lei, Harshi Gangrade, Myo Htet, Sheetal Bajpayi, Sean Murphy, Edwin Yoo, Navid Koleni, Emmanouil Tampakakis
8. **A fish specific gene called *elif4e1c* regulates mRNA translation and cardiac growth in zebrafish**
Anupama Rao, Baken Lyu, Ishrat Jahan, Anna Lubertozi, Frank Tedeschi, Eckhard Jankowsky, Bryan Carstens, Kenneth Poss, Junsu Kang, Kedryn Baskin, Gao Zhao, Joseph Aaron Goldman
9. **Pontin is necessary and sufficient for driving cardiomyocyte proliferation in zebrafish and mice**
Hui-Min Yin, Xinlei Gao, Kaifu Chen, Caroline Burns, C. Geoffrey Burns

5:30-6:30 pm **Keynote Lecture I:** Dr. Xin Sun, Ph.D., University of California, San Diego
 “United and vital: Lung as a sensory organ in partnership with heart”

****Keynote generously sponsored by UCSD School of Biological Sciences****

6:30-8:30 pm **Poster Session I**
 Odd numbered posters present

Friday, May 5, 2023

6:30-8:00 am Breakfast

8:00-10:00 am **Platform Session III: Single Ventricle Defects**
 Chairs: Nicole Dubois (Icahn School of Medicine at Mount Sinai) and Paul Grossfeld (University of California, San Diego)

****Session generously sponsored by Additional Ventures****

Introduction to Additional Ventures

Kaitlin Davis

10. **Spatial single-cell transcriptomic analysis identifies molecular and cellular signatures of local ventricular growth and maturation during normal and hemodynamically perturbed morphogenesis**
Mong Lung Steve Poon, Rohit Agarwal, Shuofei Sun, Iwijn De Valminck, Jonathan T. Butcher

11. **Mapping early cardiac development in patients with hypoplastic left heart syndrome**
Hananeh Fonoudi, Ralph Patrick, Alexis Bosman, David Humphreys, Adam Hill, David Winlaw, Richard Harvey, Paul Burrridge

12. Abnormal progenitor cell differentiation and cardiomyocyte proliferation in hypoplastic right heart syndrome

Yang Yu, Cankun Wang, Shiqiao Ye, Zhaohui Xu, Hui Lin, Karen Texter, Vasuda Shukla, Samir Ghadiali, Qin Ma, Vidu Garg, Ming-Tao Zhao

13. Development of ventricular septal defects in Down Syndrome model mice

Mint Htun, Rifdat Aoidi, Eva Lana-Elola, Dorota Gibbins, Callan Buechsenschuetz, Jeremy Green, Victor Tybulewicz

14. An oligogenic architecture of rare noncoding variants distinguishes four congenital heart disease phenotypes

Mengyao Yu, Matthew Aguirre, Meiwen Jia, Ketrin Gjoni, Aldo Cordova-Palomera, Chad Munger, Dulguun Amgalan, X Rosa Ma, Alexandre Pereira, Catherine Tcheandjieu, Christine Seidman, Jonathan Seidman, Martin Tristani-Firouzi, Wendy Chung, Elizabeth Goldmuntz, Deepak Srivastava, Ruth J.F. Loos, Nathalie Chami, Heather Cordell, Martina Dreßen, Bertram Mueller-Myhsok, Harald Lahm, Markus Krane, Katherine S. Pollard, Jesse M. Engreitz, Sarah A. Gagliano Taliun, Bruce D. Gelb, James R. Priest

10:00-10:30 am Coffee Break

10:30-12:10 pm **Platform Session IV: Tissue Engineering & Mechanisms of Differentiation**
Chairs: Sophie Astrof (Rutgers University) and Karen Ocorr (Sanford Burnham Prebys Medical Discovery Institute)

**** Session generously sponsored by Additional Ventures****

15. Multi-chamber cardioids unravel human heart development and cardiac defects

Alison Deyett, Clara Schmidt, Tobias Ilmer, Aranxa Torres Caballero, Simon Haendeler, Sasha Mendjan

16. Teaching human pluripotent stem cells embryo tricks to generate left ventricle cardiomyocytes with mature properties

Andreia Sofia Bernardo, Nicola Dark, Marie-Victoire Cosson Sjothun, Lorenza Tsansizi, Thomas Owen, Elisa Ferraro, Alice Francis, Camille Bouissou, Selina Tsai, Anne Weston, Lucy Collinson, Najah Abi-Gerges, Paul Miller, Kenneth MacLeod, Elisabeth Ehler, Richard Mitter, Sian Harding, James Smith

17. The sarcomeric z body shows distinct biophysical properties in nascent cardiomyocytes

Bhavana Shewale, Tasneem Ebrahim, David Sachs, Andrew Kurland, David Sanders, Clifford Liu, Elisabeth Ehler, Bruce Gelb, Clifford Brangwynne, Jeffrey Johnson, Nicole Dubois

18. Conserved transcription factors restrict cardiac reprogramming potential in differentiated cells

Maria Missinato, Sean Murphy, Michaela Lynott, Michael Yu, Anaïs Kervadec, Yu-Ling Linda Chang, Suraj Kannan, Mafalda Loreti, Christopher Lee, Prashila Amatya, Hiroshi Tanaka, Chun-Teng Huang, Pier Puri, Chulan Kwon, Peter Adams, Li Qian, Alessandra Sacco, Peter Andersen, Alexandre Colas

19. Chromatin remodeler Brahma safeguards canalization of cardiac mesoderm differentiation

Swetansu Hota, Benoit Bruneau, Irfan Kathiriya, Jonathon Muncie, Kavitha Rao, Kevin Hu, Kelly Hayes

12:00-1:30 pm Lunch

1:30-2:00 pm **Special Session:** NIH Opportunities & Resources
Chair: Kimara Targoff (Columbia University)

Charlene Schramm, NIH/NHLBI: Funding opportunities through the NIH INCLUDE, Kids First, Carol Act, and Bench to Bassinet programs

Sara Ahlgren, NIH/CSR: Cardiovascular development and regeneration review at NIH

H. Joseph Yost, The University of Utah: Cardiovascular Development Data Resource Center

2:00-4:00 pm **Platform Session V:** Patterning & Morphogenesis
Chairs: Jau-Nian Chen (University of California, Los Angeles) and Kelly Smith (The University of Melbourne)

****Session generously sponsored by UCSD School of Biological Sciences****

20. Cilia function as calcium-mediated mechanosensors that instruct cardiac left-right asymmetry

Lydia Djenoune, Mohammed Mahamdeh, Thai Truong, Christopher Nguyen, Scott Fraser, Martina Brueckner, Jonathon Howard, Shialou Yuan

21. The myocardium utilizes Pdgfra-PI3K signaling to steer towards the midline during heart tube formation.

Rabina Shrestha, Tess McCann, Harini Saravanan, Prashanna Koirala, Joshua Bloomekatz

22. Single-cell morphometrics reveals T-box gene dependent patterns of epithelial tension in the second heart field

Clara Guijarro, Solène Song, Benoît Aigouy, Paul Villoutreix, Robert Kelly

23. Coordinated regulation of the actomyosin cytoskeleton, cell shape, and chamber morphology in the zebrafish heart

Dena Leerberg, Gabriel Avillion, Deborah Yelon

24. Pericardium formation occurs as a distinct process during heart morphogenesis

Hannah Moran, Jelena Kresoja-Rakic, Robert Lalonde, Ryenne-Christine Ching, Rebecca O'Rourke, Maxwell Hiltabidle, Frederike Riemslag, Christian Mosimann

25. Nr2f1a and Isl1 repress epicardial identity within venous atrial cardiomyocytes

Kendall Martin, Joshua Waxman

4:00-4:30 pm Coffee Break

4:30-5:30 pm **Keynote Lecture II:** Dr. Hanna Mikkola, M.D. Ph.D., University of California, Los Angeles
“Deciphering the path from hemogenic endothelium to self-renewing human hematopoietic stem cells”

****Keynote generously sponsored by Sanford Burnham Prebys Medical Discovery Institute****

5:30-7:30 pm **Poster Session II**
Even numbered posters present

7:30 pm Dinner on your own

Saturday, May 6, 2023

6:30-8:00 am Breakfast

8:00-9:40 am **Platform Session VI:** Cardiac Regeneration & Conduction
Chairs: Alex Colas (Sanford Burnham Prebys Medical Discovery Institute) and Daniela Panáková (UKSH Kiel)

26. Parasympathetic nerves target the cardiac ventricles and undergo physiological reinnervation during heart regeneration

Rebecca Salamon, Poorva Halbe, William Kasberg, Jiyoung Bae, Anjon Audhya, Ahmed Mahmoud

27. Participation of ventricular trabeculae in neonatal cardiac regeneration leads to ectopic recruitment of Purkinje-like cells

Lucie Boulgakoff, Robert Kelly, Lucile Miquerol

28. Regeneration of the cardiac conduction system

Judy Sayers, Xin Sun, Carla de Villiers, Tatjana Sauka-Spengler, Paul Riley

29. Interplay between calcium cycling and sarcomeres directs cardiomyocyte redifferentiation and maturation during regeneration

Phong Nguyen, Jeroen Bakkers

30. Control of sex differential SRL expression and calcium cycling by X-chromosome miRNAs

James Isaiah Emerson, Frank Conlon

9:40-10:10 am Coffee Break

10:10-11:50 am **Platform Session VII: Mechanisms of Congenital Heart Disease**
Chairs: Rolf Bodmer (Sanford Burnham Prebys Medical Discovery Institute)
and Sigolène Meilhac (Imagine and Pasteur Institutes)

****Session generously sponsored by Sanford Burnham Prebys Medical Discovery Institute****

31. Functional dissection of human cardiac enhancers and non-coding de novo variants in congenital heart disease

Feng Xiao, Xiaoran Zhang, Sarah U. Morton, Seong Won Kim, Youfei Fan, Huan Zhang, Josh Gorham, Paul J. Perkson, Neil Mazumdar, Jian Chen, Yangpo E. Cao Xujie Liu, Pingzhu Zhou, Tarsha Ward, Bruce D. Gelb, Christine Seidman, Jonathan Seidman, William Pu

32. Alternative splicing of AARS2 is mediated by PCBP1, an RNA-binding protein essential for cardiac development

Yao Wei Lu, Zhuomin Liang, Haipeng Guo, Tiago Fernandes, Ramon Espinoza-Lewis, Tingting Wang, Kathryn Li, Xue Li, Gurinder Singh, Yi Wang, John Mably, Douglas Cowan, Hong Chen, Da-Zhi Wang

33. A novel role for CRTC linking age-related cardiac dysfunction and fibrosis to metabolic syndrome

Cristiana Dondi, Georg Vogler, Alexandre Colas, Karen Ocorr

34. Impact of maternal diabetes-associated oxidative stress on the developing heart

Talita Zahin Choudhury, Sarah Greskovich, Holly Girard, Sara Adamczak, Emily Cameron, Vidu Garg

35. Single cell multimodal analyses reveal epigenomic and transcriptomic basis for heart defects in maternal diabetes

Tomohiro Nishino, Sanjeev Ranade, Angelo Pelonero, Mauro Costa, Deepak Srivastava

12:00-1:30 pm Lunch

1:30-2:00 pm Weinstein Conference Business Meeting
Chair: Stéphane Zaffran (Aix Marseille Université)

2:00-4:00 pm **Platform Session VIII: Valves & Vessels**
Chairs: Richard Cripps (San Diego State University) and Rubén Marin Juez (Université de Montréal)

36. Egr3 promotes endothelial cell migration during atrioventricular valve formation

Agatha Ribeiro da Silva, Felix Gunawan, SoEun Lim, Shivam Jha, Radhan Ramadass, Stefan Guenther, Thomas Juan, Didier Stainier

37. Localized Prox1 is required for aortic valve endothelial cell diversity and extracellular matrix stratification

Anna O'Donnell, Brittany Gonzalez, Shreyasi Mukherjee, Christina Alfieri, Ruby Wilson, Casey Swoboda, Douglas Millay, Aaron Zorn, Katherine Yutzey

38. KIAA2026-DZIP1 interactions and their roles in ciliogenesis during valve development

Lilong Guo, Julia Hohn, Kathryn Byerly, Jordan Morningstar, Cortney Gensemer, Taylor Petrucci, Erica Bistran, Julianna Weninger, Kristina Stayer, Tyler Beck, Rebecca Byrd, Shaoni Dasgupta, Russell Norris

39. Characterization of the cardiovascular matrisome and its blood flow-dependent regulation by Adamts proteases in development and disease

Salvatore Santamaria, Salim Abdelilah-Seyfried, Alessio Paolini

40. Transcriptional regulation by TBX18 in vascular smooth muscle cells is essential for normal aortic development and homeostasis

Debanjan Mukherjee, Veronica Larcher, Sofia Peruzzo, Stefan Guenther, Yusu Gu, Kirk L. Peterson, Lars Maegdefessel, Stefanie Dimmeler, Paola Cattaneo, Sylvia Evans, Nuno Camboa

41. Single cell RNA-sequencing of the Mesp1 lineage uncovers crucial roles of Crk/Crkl in early endothelial cell angiogenesis in mouse embryos

Lijie Shi, Hansoo Song, Bin Zhou, Bernice Morrow

4:00-4:30 pm Coffee Break

4:30-5:30 pm **Platform Session IX: Trabeculation**

Chairs: Gonzalo del Monte-Nieto (Australian Regenerative Medicine Institute) and Deborah Yelon (University of California, San Diego)

42. Trabecular fate is genetically hardwired from early cardiac looping stages

Veronica Uribe Sokolov, Samuel Capon, Drishti Rajesh, Nicole Dominado, Kelly Smith

43. A pull on the heartstrings: cellular dynamics of trabecular ridge growth and density control

Toby Andrews, Marie-Christine Ramel, Rashmi Priya

44. Endocardial HDAC3 promotes myocardial trabeculation through a microRNA pathway

Jihyun Jang, Deqiang Li

5:30-5:45 pm Closing Remarks

7:00-10:00 pm Farewell Banquet and Awards