Kyle M. Loh

Department of Developmental Biology and the Institute for Stem Cell Biology & Regenerative Medicine
Stanford University School of Medicine
265 Campus Drive, Lokey Stem Cell Research Building Rm G3105, Stanford, CA 94305 USA
Email: kyleloh@stanford.edu • *Web*: https://loh.stanford.edu • *Phone*: (+1) 973-864-7439

Research Overview

Our goal is to understand how human tissue progenitors are specified and to apply this knowledge to generate pure populations of these cell-types from embryonic and induced pluripotent stem cells (Loh et al., 2014; *Cell Stem Cell*; Loh et al., 2016; *Cell*; Ang et al., 2018; *Cell Reports*; Ang et al., 2022; *Cell*). This will lend insight into how early human tissues develop and should provide a foundation for regenerative medicine. We also develop new tools for regenerative medicine (Martin et al., 2020; *Nature Comms*) and to expand tissue progenitors (Nichane et al., 2017; *Nature Methods*). Intellectual interests also include pluripotency (Loh & Lim, 2011; *Cell Stem Cell*; Loh et al., 2015, *Physiol Rev*; Fowler et al., 2019; *WIREs Dev Biol;* Dundes & Loh, 2020; *Nature Cell Biol*), signal transduction (Clevers, Loh & Nusse, 2014; *Science*), evolution (Loh et al., 2016; *Dev Cell*), cell-fate transitions (Loh & Lim, 2012, 2013, 2015; *Nature*; Nichane & Loh, 2018; *Cell Stem Cell*) and tissue organization (Zheng & Loh, 2022; *Curr Opin Biotech*).

Training & Appointments

Guest Researcher, Center for Biological Threats & Special Pathogens, Robert Koch Institute 2021-Current

Assistant Professor and The Anthony DiGenova Endowed Faculty Scholar, Stanford University 2018-Current
Department of Developmental Biology and the Institute for Stem Cell Biology & Regenerative Medicine
Member, Bio-X, ChEM-H, Stanford Cancer Institute, Stanford Cardiovascular Institute, Stanford Diabetes Research Center, Stanford Maternal Child Health Research Institute & Wu Tsai Neurosciences Institute

Siebel Investigator and Instructor, Stanford University 2016-2018
Independent group leader at the Institute for Stem Cell Biology & Regenerative Medicine

Ph.D., Developmental Biology, Stanford University (Advisor: Prof. Irving Weissman) 2011-2016

Intern, Genome Institute of Singapore, A*STAR (Advisor: Prof. Bing Lim) 2010-2011

B.A., Cell Biology & Neuroscience *summa cum laude*, Rutgers University 2007-2010
Advisors: Prof. Dale Woodbury (Rutgers RWJMS) and Prof. Kevin Eggan and Prof. Douglas Melton (Harvard)

County College of Morris 2006-2007

Fellowships & Awards

Packard Fellowship for Science and Engineering 2019
Recognizes junior faculty in "physics, chemistry, mathematics, biology, astronomy, computer science, earth science, ocean science, and all branches of engineering"; each institution nominates 2 faculty members to a national competition (22 selected from across the U.S. in 2019)

Pew Biomedical Scholar 2019
Recognizes junior faculty in biology research; each institution nominates 1 faculty member to a national competition (22 selected from across the U.S. in 2019)

Human Frontier Science Program Young Investigator 2019
Recognizes junior faculty in biology research working "across national and disciplinary boundaries" (9 teams selected from 160 applicants worldwide in 2019)

The Anthony DiGenova Endowed Faculty Scholar at Stanford University 2018

Forbes 30 Under 30 2018
Recognizes individuals under age 30 in the healthcare category (30 selected from across the U.S. in 2018)

Donald and Delia Baxter Foundation Faculty Scholar 2018
2 junior faculty selected from across Stanford Medicine in 2018

Fannie and John Hertz Foundation Thesis Prize 2018
Recognizes exceptional Ph.D. thesis work by graduating Hertz Fellows (1 selected from across the U.S. in 2018)

NIH Director's Early Independence Award (**DP5**) 2017
To establish an independent research program in the U.S., awarded under the NIH High Risk/High Reward Research Program (11 selected from across the U.S. in 2017)

Siebel Investigatorship 2016
To establish an independent research program at the Stanford Inst. for Stem Cell Biology & Regenerative Medicine

A*STAR Investigatorship (**declined**) 2016
To establish an independent research program in Singapore (2 selected from 120 applicants worldwide in 2016)

Harold M. Weintraub Graduate Award, **Fred Hutchinson Cancer Research Center** 2015
Recognizes thesis work by graduating biology Ph.D. students across the world (13 selected worldwide in 2015)

Fannie and John Hertz Foundation Graduate Fellowship Award 2011-2016
The most selective science Ph.D. fellowship in the U.S. (15 selected from 558 applicants in 2011, top 3%)

U.S. National Science Foundation Graduate Research Fellowship 2011-2014
Science and technology U.S. Ph.D. fellowship (selected from ~20,000 applicants across the U.S. in 2011)

Davidson Laureate Fellowship 2010-2020
Recognizes research by students age 18 or under, from across the U.S. (3 selected from across the U.S. in 2010)

A*STAR Singapore International Pre-Graduate Award, for 1-year research internship 2010-2011
Rutgers University School of Arts & Sciences Excellence Award 2007-2010
Harvard Stem Cell Institute Internship Program 2008
Research & Development Council of New Jersey Scholarship 2007

Publications (Research Articles)

**Co-first authors; **Co-second authors; †Co-senior/corresponding authors*

1. Genuth NR, Shi Z, Kunimoto K, Hung V, Xu AF, Kerr CH, Tiu GC, Oses-Prieto JA, Salomon-Shulman REA, Axelrod JD, Burlingame AL, **Loh KM**, Barna M (2022). **A stem cell roadmap of ribosome heterogeneity reveals a function for RPL10A in mesoderm production**. *Nature Communications* 13: 5491, PubMed 36123354

2. Gonzalez-Perez D, Das S, Antfolk D, Ahsan HS, Medina E, Dundes CE, Jokhai RT, Egan ED, Blacklow SC, **Loh KM**, Rodriguez PC, Luca VC (2022). **Affinity-matured DLL4 ligands as broad-spectrum modulators of Notch signaling**. *Nature Chemical Biology*, advance online publication, PubMed 36050494

3. Roodgar M, Suchy FP, Nguyen LH, Bajpai VK, Sinha R, Vilches-Moure JG, Van Bortle K, Bhadury J, Metwally A, Jiang L, Jian R, Chiang R, Oikonomopoulos A, Wu JC, Weissman IL, Mankowski JL, Holmes S, **Loh KM**, Nakauchi H*, VandeVoort CA*, Snyder MP* (2022). **Chimpanzee and pig-tailed macaque iPSCs: Improved culture and generation of primate cross-species embryos**. *Cell Reports* 40: 111264, PubMed 36044843

4. Ang LT*, Nguyen A*, Liu KJ*, Chen A**, Xiong XC**, Curtis M, Martin RM, Raftry BC, Ng CY, Vogel U, Lander A, Lesch BJ, Fowler JL, Holman AR, Chai T, Vijayakumar S, Suchy FP, Nishimura T, Bhadury J, Porteus MH, Nakauchi H, Cheung C, George SC, Red-Horse K, Prescott JB† & **Loh KM**† (2022). **Generating human artery and vein cells from pluripotent stem cells highlights the arterial tropism of Nipah and Hendra viruses**. *Cell* 185: 2523-2541, PubMed 35738284
Featured in *Nature Methods* and Stanford Medicine News

5. Chang CY*, Shipony Z*, Lin SG, Kuo A, Xiong X, **Loh KM**, Greenleaf WJ, Crabtree GR (2021). **Increased ACTL6A occupancy within mSWI/SNF chromatin remodelers drives human squamous cell carcinoma**. *Molecular Cell* 81: 4964-4978, PubMed 34687603

6. Raftrey B, Williams M, Rios Coronado PE, Fan X, Chang AH, Zhao M, Roth R, Trimm E, Racelis R, D'Amato G, Phansalkar R, Nguyen A, Chai T, Gonzalez KM, Zhang Y, Ang LT, **Loh KM**, Bernstein D, Red-Horse K (2021). **Dach1 Extends Artery Networks and Protects Against Cardiac Injury**. *Circulation Research* 129:702-716, PubMed 34383559

7. Kang G*, Vijayakumar S*, Sala R, Chen A, Adebayo AI, Cipriano A, Fowler JF, Ang LT, **Loh KM**†, Sebastiano V† (2021). **Monolayer platform to generate and purify human primordial germ cells in vitro provides new insights into germline specification**. *Research Square Nature Portfolio* (preprint).

8. Keough KC*, Shah PP*, Gjoni K, Santini GT, Wickramasinghe NM, Dundes CE, Karnay A, Chen A, Salomon REA, Walsh PJ, Whalen S, Joyce EF, **Loh KM**, Dubois N, Pollard KS†, Jain R† (2021). **An atlas of lamina-associated chromatin across twelve human cell types reveals an intermediate chromatin subtype**. *bioRxiv* (preprint).

9. Martin RM*, Fowler JL*, Cromer MK, Lesch BJ, Ponce E, Uchida N, Wiebking V, Nishimura T, Porteus MH†, **Loh KM**† (2020). **Genome edited orthogonal safeguards to improve the safety of human pluripotent stem cell-based therapies**. *Nature Communications* 11: 2713, PubMed 32483127 (†co-senior authors)

10. Roth JG*, Muench KL*, Asokan A, Mallett VM, Gai H, Verma Y, Weber S, Charlton C, Fowler JL, **Loh KM**, Dolmetsch RE, Palmer TD (2020). **Copy Number Variation at 16p11.2 Imparts Transcriptional Alterations in Neural Development in an hiPSC-derived Model of Corticogenesis**. *eLife* 9: e58178, PubMed 33169669

11. Cui KW*, Engel L*, Dundes CE, Nguyen TC, **Loh KM**†, Dunn AR† (2020). **Spatially controlled stem cell differentiation via morphogen gradients: a comparison of static and dynamic microfluidic platforms**. *Journal of Vacuum Science & Technology A* 38: 033205, PubMed 32255900 (†co-corresponding authors)

12. Wilkinson AC, Ishida R, Kikuchi M, Sudo K, Morita M, Crisostomo RV, Yamamoto R, **Loh KM**, Nakamura Y, Watanabe M, Nakauchi H, Yamazaki S (2019). **Long-term *ex vivo* haematopoietic-stem-cell expansion allows nonconditioned transplantation**. ***Nature*** 571:117-121, PubMed 31142833

13. George BM, Kao KS, Kwon HS, Velasco BJ, Poyser J, Chen A, Le AC, Chhabra A, Burnett CE, Cajuste D, Hoover M, **Loh KM**, Shizuru JA, Weissman IL (2019). **Antibody conditioning enables MHC-mismatched hematopoietic stem cell transplants and organ graft tolerance**. ***Cell Stem Cell*** 25, 185-192, PubMed 31204177

14. Ang LT, Tan AKY, Autio MI, Goh SH, Choo S, Lee KL, Tan J, Pan B, Lee JJ, Lum JJ, Lim Y, Yeo K, Wong J, Oh L, Chia P, Chen A, Chen QF, Weissman IL, **Loh KM**†, Lim B† (2018). **A roadmap for human liver differentiation from pluripotent stem cells**. ***Cell Reports*** 22, 2190–2205 *(†co-senior author)*, PubMed 29466743

15. Allen WE*, DeNardo LA*, Chen MZ*, Liu CD, **Loh KM**, Fenno LE, Ramakhrishnan C, Deisseroth K†, Luo L† (2017). **Thirst-associated preoptic neurons encode an aversive motivational drive**. ***Science*** 357: 1149-1155, PubMed 28912243

16. Brown K*, **Loh KM***, Nusse R (2017). **Live imaging reveals that the first division of differentiating human embryonic stem cells often yields asymmetric fates**. ***Cell Reports*** 21: 301-307 (**co-first author*), PubMed 29020617

17. Nichane M, Javed A, Sivakamasundari V, Ganesan M, Ang LT, Kraus P, Lufkin T, **Loh KM**†, Lim B† (2017). **Isolation and expansion of Sox9⁺ mouse embryonic lung progenitors that generate both airway and alveolar lineages**. ***Nature Methods*** 14, 1205-1212 *(†co-senior/co-corresponding author)*, PubMed 29106405

Featured in Stanford Medicine News

18. **Loh KM***, Chen A*, Koh PW, Deng T, Sinha R, Tsai JM, Barkal AA, Shen KY, Jain R, Morganti RM, Ng SC, Fernhoff NB, George BM, Wernig G, Salomon RAE, Chen Z, Vogel H, Epstein JA, Kundaje A, Talbot WS, Beachy PA, Ang LT†, Weissman IL† (2016). **Mapping the pairwise choices leading from pluripotency to human bone, heart, and other mesoderm cell types**. ***Cell*** 166: 451-67 (**co-first author*), PubMed 27419872

Featured in the NIH Director's Blog, Stanford Medicine News, the *San Jose Mercury News* and *Fierce Biotech*; with an accompanying Cell Press Video Abstract (only one paper selected per issue) and Preview by Kyba (2016); *Cell Stem Cell* 19: 146-8

19. Cheng H, Ang HYK, Farran CAEL, Li P, Fang H, Liu T, Kong SL, Chin ML, Lim EKH, Li H, Huber H, **Loh KM**, Loh YH, Lim B (2016). **Reprogramming mouse fibroblasts into engraftable myeloerythroid and lymphoid progenitors: induction and underlying mechanisms**. ***Nature Communications*** 7: 13396, PubMed 27869129

20. Masaki H, Kato-Itoh M, Umino A, Sato H, Ito K, Yanagida A, Hirabayashi M, Sasaki E, Yamaguchi T, **Loh KM**, Weissman IL, Nakauchi H (2016). **Inhibition of apoptosis overcomes stage-related compatibility barriers to chimera formation in mouse embryos**. ***Cell Stem Cell*** 19: 587-592, PubMed 27814480

21. Koh PW*, Sinha R*, Barkal AA, Morganti RM, Chen A, Weissman IL†, Ang LT†, Kundaje A†, **Loh KM**† (2016). **An atlas of transcriptional, chromatin accessibility, and surface marker changes in human mesoderm development**. ***Scientific Data*** 3: 160109 *(†co-senior author)*, PubMed 27996962

22. Durruthy-Durruthy J, Briggs SF, Awe J, Ramathal CY, Karumbayaram S, Lee PC, Heidmann JD, Clark A, Karakikes I, **Loh KM**, Wu JC, Hoffman AR, Byrne J, Reijo Pera RA, Sebastiano V (2014). **Rapid and efficient conversion of integration-free human induced pluripotent stem cells to GMP-grade culture conditions**. ***PLoS ONE*** 9: e94231, PubMed 24718618

23. **Loh KM***, Ang LT*, Zhang J**, Kumar V**, Ang J, Auyeong JQ, Lee KL, Choo SH, Lim CYY, Nichane M, Tan J, Noghabi MS, Azzola L, Ng ES, Durruthy-Durruthy J, Sebastiano V, Poellinger L, Elefanty AG, Stanley EG, Chen Q, Prabhakar S, Weissman IL, Lim B (2014). **Efficient endoderm induction from human pluripotent stem cells by logically directing signals controlling lineage bifurcations**. ***Cell Stem Cell*** 14: 237-52 (**co-first author*), PubMed 24412311

Featured in *A*STAR Research*

24. Chan CK*, Lindau P*, Jiang W*, Chen JY, Zhang LF, Chen CC, Seita J, Sahoo D, Kim JB, Lee A, Park S, Nag D, Gong Y, Kulkarni S, Luppen CA, Theologis AA, Wan DC, DeBoer A, Seo EY, Vincent-Tompkins JD, **Loh K**, Walmsley GG, Kraft DL, Wu JC, Longaker MT, Weissman IL (2013). **Clonal precursor of bone, cartilage, and hematopoietic niche stromal cells**. ***Proc Natl Acad Sci USA*** 110: 12643-8, PubMed 23858471

25. Ichida JK*, Blanchard J*, Lam K*, Son EY*, Chung JE, Egli D, **Loh KM**, Carter AC, Di Giorgio FP, Koszka K, Huangfu D, Akutsu H, Liu DR, Rubin LL, Eggan K (2009). **A small molecule inhibitor of TGF-β signaling replaces *Sox2* in reprogramming by inducing *Nanog***. ***Cell Stem Cell*** 5: 491-503, PubMed 19818703

Publications (Review or Other Articles)

26. Zheng SL and **Loh KM** (2022). **Creating artificial signaling gradients to spatially pattern engineered tissues**. ***Current Opinion in Biotechnology*** 78: 102810, PubMed 36182872

27. Dundes CE and **Loh KM** (2020). **Bridging naïve and primed pluripotency**. ***Nature Cell Biology*** 22: 513-515, PubMed 32367045

28. Fowler JL, Ang LT†, **Loh KM**† (2019). **A critical look: challenges in differentiating human pluripotent stem cells into desired cell-types and organoids**. ***WIREs Developmental Biology*** 9: e368, PubMed 31746148

29. **Loh KM**, Palaria A, Ang LT (2019). **Efficient differentiation of human pluripotent stem cells into liver cells**. ***Journal of Visualized Experiments*** 148: e58975, PubMed 31259908

30. Nichane M and **Loh KM** (2018). **Obliterating obstacles to an odyssey**. ***Cell Stem Cell*** 23: 313-15, PubMed 30193127

31. Tan AKY, **Loh KM**, Ang LT (2017). **Evaluating the regenerative potential and functionality of human liver cells in mice**. ***Differentiation*** 98: 25-34, PubMed 29078082

32. **Loh KM***, van Amerongen R*, Nusse R (2016). **Generating spatial form and cellular diversity: Wnt signaling and the evolution of multicellular animals**. ***Developmental Cell***, 38: 643-655 *(*co-first author)*, PubMed 27676437

33. **Loh KM**, Lim B, Ang LT (2015). **Stem cell genomics: developmental competence**. ***Principles and Practice of Genomic Medicine (2nd Edition)*** by Oxford University Press

34. **Loh KM**, Lim B, Ang LT (2015). **Ex uno plures: molecular designs for embryonic pluripotency**. ***Physiological Reviews*** 95: 245-295, PubMed 25540144

35. **Loh KM** and Lim B (2015). **Equilibrium established**. ***Nature*** 521: 299-300, PubMed 25993958

36. Roberts RM, **Loh KM**, Amita M, Bernardo AS, Adachi K, Alexenko AP, Schust DJ, Schulz LC, Telugu BP, Ezashi T, Pedersen RA (2014). **Differentiation of trophoblast cells from human embryonic stem cells: to be or not to be?** ***Reproduction*** 147: D1-D12, PubMed 24518070

37. Clevers H, **Loh KM**, Nusse R (2014). **An integral program for tissue renewal and regeneration: Wnt signaling and stem cell control**. ***Science*** 346: 1248012, PubMed 25278615

38. **Loh KM** and Lim B (2013). **Rejuvenating Tithonus**. ***EMBO Reports*** 14: 583-4, PubMed 23764924

39. **Loh KM** and Lim B (2013). **Close encounters with full potential**. ***Nature*** 502: 41-42, PubMed 24048472

40. Heng DJC, **Loh KM**, Ng HH (2012). **Investigating the *bona fide* differentiation capacity of human pluripotent stem cells**. ***Cell Research*** 22: 6-8, PubMed 21876556

41. **Loh KM** and Lim B (2012). **Actors in the cell reprogramming drama**. ***Nature*** 488: 599-600, PubMed 22932382

42. **Loh KM** and Lim B (2011). **A precarious balance: pluripotency factors as lineage specifiers**. ***Cell Stem Cell*** 8: 363-9, PubMed 21474100

    Featured in Editorial "Our top 10 developments in stem cell biology over the last 30 years" by Armstrong et al., 2012; *Stem Cells* 30: 2-9

43. **Loh KM***, Soh BS*, Tam WL, Lim B (2010). **Molecular principles underlying the pluripotency and differentiation of embryonic stem cells**. ***Stem Cells: From Bench to Bedside (2nd Edition)*** by World Bioscience *(*co-first author)*

44. **Loh KM** and Lim B (2010). **Recreating pluripotency?** ***Cell Stem Cell*** 7: 137-9, PubMed 20682438

Teaching

All lectures drawn from >20 papers in the primary literature, listed in the Works Cited of each lecture.

STEMREM201A (**Stem Cells & Human Development**): Autumn 2015-2017 (Lecturer), Autumn 2018-2022 (**Co-Director**) Leader of revised course to teach principles of stem cell biology and regenerative medicine to Stanford Ph.D. students, M.D. students and undergraduates. Created new curriculum. Presented or prepared 10 out of 17 total lectures and led 3 discussion sections (2018-onwards). In past years, presented up to 3 lectures (2015-2017).

STEMREM200 (**Stem Cell Intensive**): Autumn 2018-2020 (**Co-Director**), Autumn 2021-2022 (Lecturer)
Co-leader of revised course to immerse incoming Stanford Ph.D. students in stem cell research. Organized curriculum and laboratory sessions. Presented 1 lecture.

HUMBIO157 (**The Biology of Stem Cells**): Spring 2017 (Lecturer), Spring 2019 (**Co-Director**)
Co-leader of course to teach principles of stem cell biology and regenerative medicine to Stanford undergraduates (2019). Presented 3 lectures on pluripotency, lineage decisions and blood stem cells (2017, 2019).

DBIO210 (**Logic and Circuitry of Multicellular Development**): Spring 2019-2022 (Lecturer)
Presented 1 lecture on early embryonic development and led 2 discussion sessions for Stanford Ph.D. students.

STEMREM202 (**Stem Cells & Regenerative Medicine**): Winter 2017-2022 (Lecturer)
Presented 1 lecture on pluripotent stem cell differentiation for Stanford Ph.D. students.

BIO160 (**Developmental Biology**): Winter 2020 (Lecturer)
Presented 3 lectures on pluripotent and blood stem cells for Stanford undergraduates.

IMMUNOL223 (**Biology & Disease of Hematopoiesis**): Winter 2020-2022 (Lecturer)
Presented 1 lecture on embryonic blood development and led 1 discussion session for Stanford Ph.D. students.

Oral Presentations

**Held virtually due to COVID19*

2023 **Bill and Melinda Gates Foundation, B Cell Therapy Meeting** (Seattle, WA, USA)—*pending**
RIKEN BDR-CuSTOM Joint Organoid Symposium (Kobe, Japan)—*pending*
Davidson Institute Summit (Reno, NV, USA)—*pending*
Cold Spring Harbor Cell State Conversion Meeting (Cold Spring Harbor, NY, USA)—*pending*
North American Vascular Biology Organization (Newport, RI, USA)—*pending*

2022 **Society for Laboratory Automation & Screening International Conference** (Boston, MA, USA)*
U.S. Centers for Disease Control and Prevention, Viral Special Pathogens Branch (Atlanta, GA, USA)
International Society for Stem Cell Research (**ISSCR**) **Meeting 2022** (San Francisco, CA, USA)*
DSO National Laboratories (Singapore, Republic of Singapore)
Institute of Molecular and Cell Biology, A*STAR (Singapore, Republic of Singapore)
Infectious Diseases Laboratories, A*STAR (Singapore, Republic of Singapore)
University of California San Francisco (**UCSF**), **Jonah Platt Seminar** (San Francisco, CA, USA)
Cold Spring Harbor Asia Human Development Meeting, Pre-Meeting Webinar (Awaji, Japan)*
Cincinnati Children's Hospital Medical Center (Cincinnati, OH, USA)
San José State University (San Jose, CA, USA)
Regenerative Medicine Seminar Series (**ReMS**), **Stanford University** (Stanford, CA, USA)
University of Toronto, From Single-Cells to Tissue Symposium (Toronto, Canada)
Spinal Muscular Atrophy Foundation (San Diego, CA, USA)*
Stanford Diabetes Research Center Annual Diabetes Research Forum (Stanford, CA, USA)
Amaranth Foundation (San Francisco, CA, USA)*
Stanford Ludwig Center for Cancer Stem Cell Research and Medicine (Stanford, CA, USA)

2021 **Kyoto University, Department of Medicine** (Kyoto, Japan)*
Single Ventricle Investigator Meeting, Additional Ventures (Palo Alto, CA, USA)*
Chan-Zuckerberg Biohub, Infectious Disease Initiative (San Francisco, CA, USA)*
Gladstone Institutes, Institute of Cardiovascular Disease (San Francisco, CA, USA)*

National Resilience, Inc. (La Jolla, CA, USA)*
Regenerative Medicine Seminar Series (**ReMS**), **Stanford University** (Stanford, CA, USA)*
Memorial Sloan Kettering Cancer Center, **Developmental Biology Program** (New York City, NY, USA)*
Stanford Ludwig Center for Cancer Stem Cell Research and Medicine (Stanford, CA, USA)

2020 **Stanford University, Siebel Stem Cell Institute Workshop** (Stanford, CA, USA)
Stanford-Gladstone Institute Retreat (Redwood City, CA, USA)
Sana Biotechnology, Inc. (Cambridge, MA, USA)
Stanford Center for Childhood Brain Tumors (Stanford, CA, USA)*
Additional Ventures Single Ventricle Seminar Series (Palo Alto, CA, USA)*
Stanford University, Pediatric Endocrinology Seminar Series (Stanford, CA, USA)*
Medical University of Graz (Graz, Austria)*
Genentech, Inc. Regeneration Symposium (South San Francisco, CA, USA)*
Juvenile Diabetes Res. Foundation Northern California Center of Excellence (San Francisco, CA, USA)*

2019 **UC Berkeley, Siebel Stem Cell Institute Workshop** (Berkeley, CA, USA)
Merck & Co., Inc. (South San Francisco, CA, USA)
Regenerative Medicine Seminar Series (**ReMS**), **Stanford University** (Stanford, CA, USA)
3rd Stanford Center for Definitive and Curative Medicine Symposium (Stanford, CA, USA)
Genentech, Inc. (South San Francisco, CA, USA)
Erasmus University Medical Center (Rotterdam, Netherlands)
EMBL Barcelona, **Spain** (Barcelona, Spain)
3D Tissue Culture and Organoids Symposium (Okinawa, Japan)
Bay Area Stem Cell Conference (Pacific Grove, CA, USA)
3rd Stanford-RIKEN Center for Integrative Medical Sciences Symposium—*organizer* (Stanford, CA, USA)
VenRock (Palo Alto, CA, USA)
5AM Ventures Speaker Series (San Francisco, CA, USA)
International Society for Stem Cell Research (**ISSCR**) **Meeting 2019** (Los Angeles, CA, USA)
Stanford University, Urology Research Seminar (Stanford, CA, USA)
Nanyang Technological University, LKC Medical School (Singapore, Republic of Singapore)
Calico Life Sciences, LLC (South San Francisco, CA, USA)
Juvenile Diabetes Res. Foundation Northern California Center of Excellence (San Francisco, CA, USA)
Stanford Institute for Stem Cell Biology & Regenerative Medicine (Stanford, CA, USA)
Augmented Cell Engineering Symposium, **University of Tokyo** (Tokyo, Japan)
42nd Molecular Biology Society of Japan Annual Meeting (Fukuoka, Japan)
Stanford Ludwig Center for Cancer Stem Cell Research and Medicine (Stanford, CA, USA)

2018 **Stanford University, Siebel Stem Cell Institute Workshop** (Stanford, CA, USA)
Stanford University, Vision (**Ophthalmology**) **Seminar Series** (Stanford, CA, USA)
Stanford University, **Diabetes Research Center Seminar Series** (Stanford, CA, USA)
Dutch Society for Stem Cell Research (Utrecht, Netherlands)
Hubrecht Institute/Princess Máxima Center for Pediatric Oncology, **Netherlands** (Utrecht, Netherlands)
2nd Stanford-RIKEN Center for Integrative Medical Sciences Symposium, **Japan** (Yokohama, Japan)
Kyoto University, **Center for iPS Cell Research and Application** (Kyoto, Japan)
Weill Cornell Medicine (New York City, NY, USA)
Memorial Sloan Kettering Cancer Center, **Developmental Biology Program** (New York City, NY, USA)
Frontiers in Organoid Medicine Symposium, **Cincinnati Children's Hospital** (Cincinnati, OH, USA)
University of Southern California (Los Angeles, CA, USA)

2017 **Regenerative Medicine Seminar Series** (**ReMS**), **Stanford University** (Stanford, CA, USA)
San José State University (San Jose, CA, USA)
RIKEN Center for Integrative Medical Sciences, **Japan** (Yokohama, Japan)
Stanford University, **Center for Definitive and Curative Medicine** (Stanford, CA, USA)
UC Los Angeles, **Department of Biological Chemistry Center** (Los Angeles, CA, USA)
Fred Hutchinson Cancer Research Center, Clinical Research Division (Seattle, WA, USA)
1st Stanford-RIKEN Center for Integrative Medical Sciences Symposium (Stanford, CA, USA)
Stanford University, **Center for Cell Biology** (Stanford, CA, USA)
3rd CIRM Annual Stem Cell Genomics Retreat (Stanford, CA, USA)
UC Los Angeles, Broad Stem Cell Research Center (Los Angeles, CA, USA)
Stanford Institute for Stem Cell Biology & Regenerative Medicine (Stanford, CA, USA)
Duke University, **Regeneration Next Initiative** (Durham, NC, USA)
The Rockefeller University (New York City, NY, USA)
Fred Hutchinson Cancer Research Center, **Basic Sciences Division** (Seattle, WA, USA)
UC Berkeley, Siebel Stem Cell Institute Workshop (Berkeley, CA, USA)

2016 **University of Pennsylvania, Institute for Regenerative Medicine** (Philadelphia, PA, USA)
San José State University, California Inst. for Regen. Medicine Internship Reception (San Jose, CA, USA)
NIH Progenitor Cell Biology Consortium HSC Focused Workshop 2016 (Boston, MA, USA)
Stem Cell Society Singapore Symposium 2016, **Singapore** (Singapore, Republic of Singapore)
Cincinnati Children's Hospital Medical Center (Cincinnati, OH, USA)
A*STAR Investigatorship Symposium, **Singapore** (Singapore, Republic of Singapore)
International Society for Stem Cell Research (**ISSCR**) **Meeting 2016** (San Francisco, CA, USA)
UC Santa Cruz, Department of Biomolecular Engineering (Santa Cruz, CA, USA)
Carnegie Institute of Washington, Department of Embryology (Baltimore, MD, USA)

2015 **Genome Institute of Singapore, A*STAR** (Singapore, Republic of Singapore)
Institute of Molecular and Cellular Biology, A*STAR (Singapore, Republic of Singapore)
Stanford Institute for Stem Cell Biology & Regenerative Medicine (Stanford, CA, USA)
Stem Cell Research Briefing Session for U.S. Senator Ron Wyden (Portola Valley, CA, USA)
UC Berkeley, Siebel Stem Cell Institute Workshop (Berkeley, CA, USA)

2014 **University of Cambridge Stem Cell Institute** (Cambridge, UK)
Cambridge Centre for Trophoblast Research Annual Meeting (Cambridge, UK)
Center for Genomic Regulation (Barcelona, Spain)
Stanford Reproductive and Stem Cell Biology Symposium 2014 (Stanford, CA, USA)

2013 **Stem Cell Society Singapore Symposium 2013** (Singapore, Republic of Singapore)

Public and Professional Activities

***Ad hoc* manuscript reviewer**. *Nature, Cell*, *Nature Genetics*, *Cell Stem Cell*, *Nature Cell Biology*, *Proc Natl Acad Sci USA*, *eLife*, *Cell Reports*, *PLoS Biology*, *Stem Cells*, *Stem Cell Reports*, *Stem Cell Research*, *Genome Biology*, *FASEB J*, *iScience*, *Nature Communications*, *ACS Biomaterials Science & Engineering*, *Development Growth and Differentiation*, *Review Commons*

Grant or award reviewer. UK Medical Research Council, Genentech, Inc., Additional Ventures Foundation, Canada Natural Sciences and Engineering Research Council, Dutch Research Council (NWO), Nanyang Technological University, Stanford Diabetes Research Center, Stanford Cancer Institute, L'Oréal Singapore For Women In Science

National Fellowship, Davidson Institute for Talent Development, Hertz Foundation

Other.

- 2022. **Annual Meeting Planning Committee, The Pew Charitable Trusts**.
- 2022. **Catalyst Advisory Board, Additional Ventures Foundation**.
- 2020. **Abstract Review Committee, International Society for Stem Cell Research** (**ISSCR**).
- 2020-Incumbent. **Scientific Advisory Board**, **Californians for Cures Foundation**.
- 2015-2018. **Scientific Advisory Board**, **Americans for Cures Foundation**. Advised public outreach efforts to inform the American public about stem cell research.
- 2015. **Helped commercialize** endoderm differentiation technology (Loh & Ang et al., 2014; *Cell Stem Cell*), which was licensed and is now sold worldwide as a cell culture media by Thermo Fisher Scientific, Inc.
- 2010. **Loh KM** and Lim B. **Fears are based on biological myths**. *The Straits Times* newspaper (Nov 8, 2010).

Outreach and Diversity Activities

- 2021-2022. **Stanford EXPLORE Lecture**: Summer lecture for high school students
- 2021. **Simons Foundation-National Society of Black Physicists**: Outreach panel for minority students applying for Ph.D. fellowships
- 2020, 2022. Outreach panel for Developmental Biology Ph.D. student applicants from underrepresented backgrounds
- 2018, 2021. **Stanford SIMR Program**: mentorship of high school interns, often drawn from underrepresented backgrounds

Institutional Service

Institute for Stem Cell Biology & Regenerative Medicine

- 2022-Incumbent. **Executive Committee** (**formerly Steering Committee**)**, Stanford Stem Cell Biology & Regenerative Medicine Ph.D. Program**.
- 2020-2022. **1st Year Ph.D. Student Mentor Program**, **Stanford Stem Cell Biology & Regenerative Medicine Ph.D. Program**.
- 2020. **COVID19 Research Recovery Committee, Stanford Lokey Stem Cell Research Building**.
- 2019-Incumbent. **Graduate Student Awards Committee**, **Stanford Stem Cell Biology & Regenerative Medicine Ph.D. Program** (*committee chair*)
- 2019-Incumbent. **Organizer, Stanford ISCBRM-RIKEN IMS Annual Symposium**.
- 2018-Incumbent. **Retreat Committee, Stanford Institute for Stem Cell Biology & Regenerative Medicine** (*formerly committee chair*)
- 2017-Incumbent. **Admissions Committee, Stanford Stem Cell Biology & Regenerative Medicine Ph.D. Program**.

Department of Developmental Biology

- 2021-Incumbent. **Organizer, Dept. of Developmental Biology, Stanford Frontiers in Biology Seminar Series**.
- 2019-Incumbent. **1st Year Ph.D. Student Mentor Program**, **Stanford Developmental Biology Ph.D. Program**.
- 2018-Incumbent. **Admissions Committee, Stanford Developmental Biology Ph.D. Program**.

Other

- 2022-Incumbent. **Faculty Evaluation Committee, Stanford University Department of Biology**.
- 2022. **Limited Submission Grant Review Committee**, **Stanford Office of the Vice Provost and Dean of Research**.

- 2021-2022. **Faculty Search Committee, Stanford University BASE Initiative**.
- 2020-Incumbent. **Co-Leader, Immunology, Transplantation and Stem Cells in Diabetes Affinity Group, Stanford Diabetes Research Center**.
- 2018-Incumbent. **NIH T32 Training Grant-affiliated Faculty**, T32GM007790 (Stanford Genetics and Developmental Biology Training Program); T32HL120824 (Stanford Program in Translational and Experimental Hematology); T32GM119995 (Stanford Graduate Training in Stem Cell Biology and Regenerative Medicine)