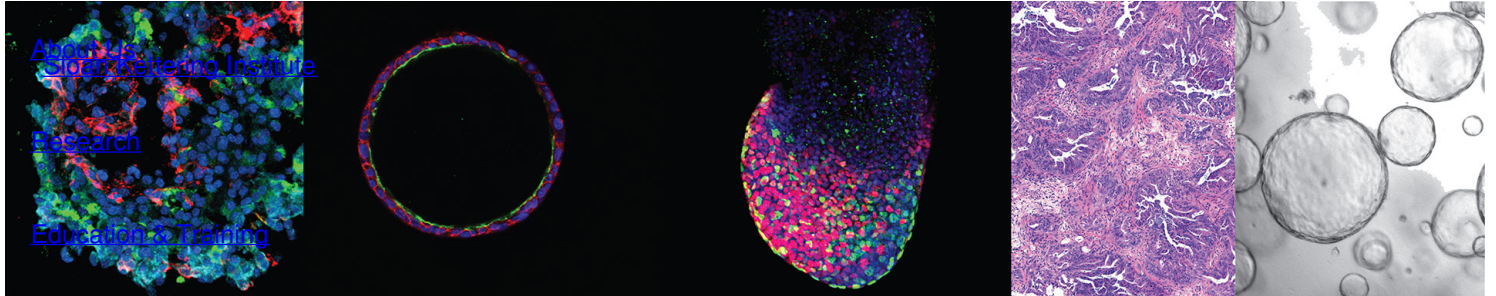


Ready to start planning your care? Call us at [800-525-2225](tel:800-525-2225) to make an appointment.

×



Memorial Sloan Kettering
Cancer Center



[About MSK](#)
[Memorial Sloan Kettering Institute](#)
[Research](#)
[Education & Training](#)

[News & Events](#)

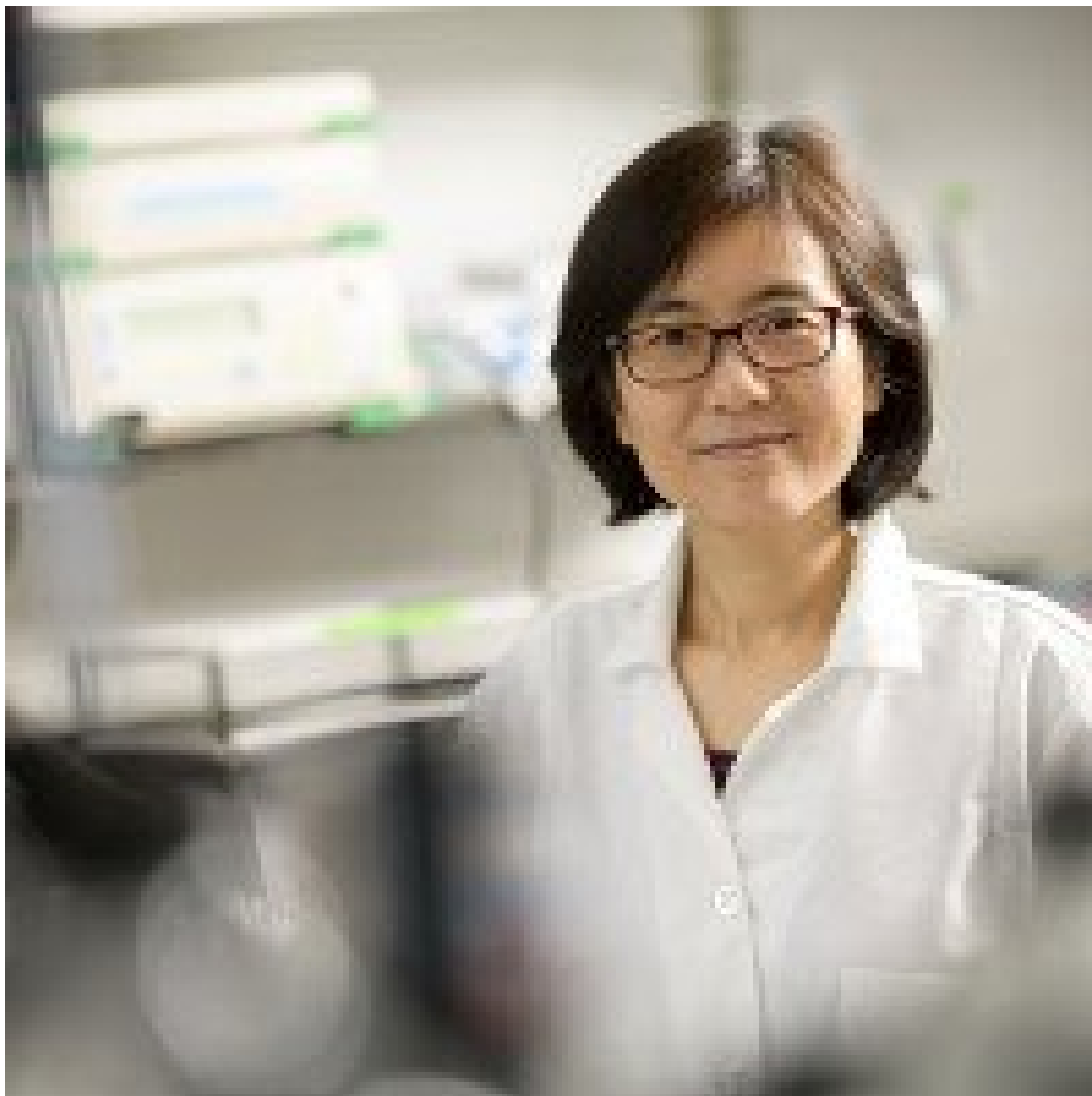
DEVELOPMENTAL BIOLOGY PROGRAM

The Danwei Huangfu Lab

[Open Positions](#)

[Developmental Biology Program](#)

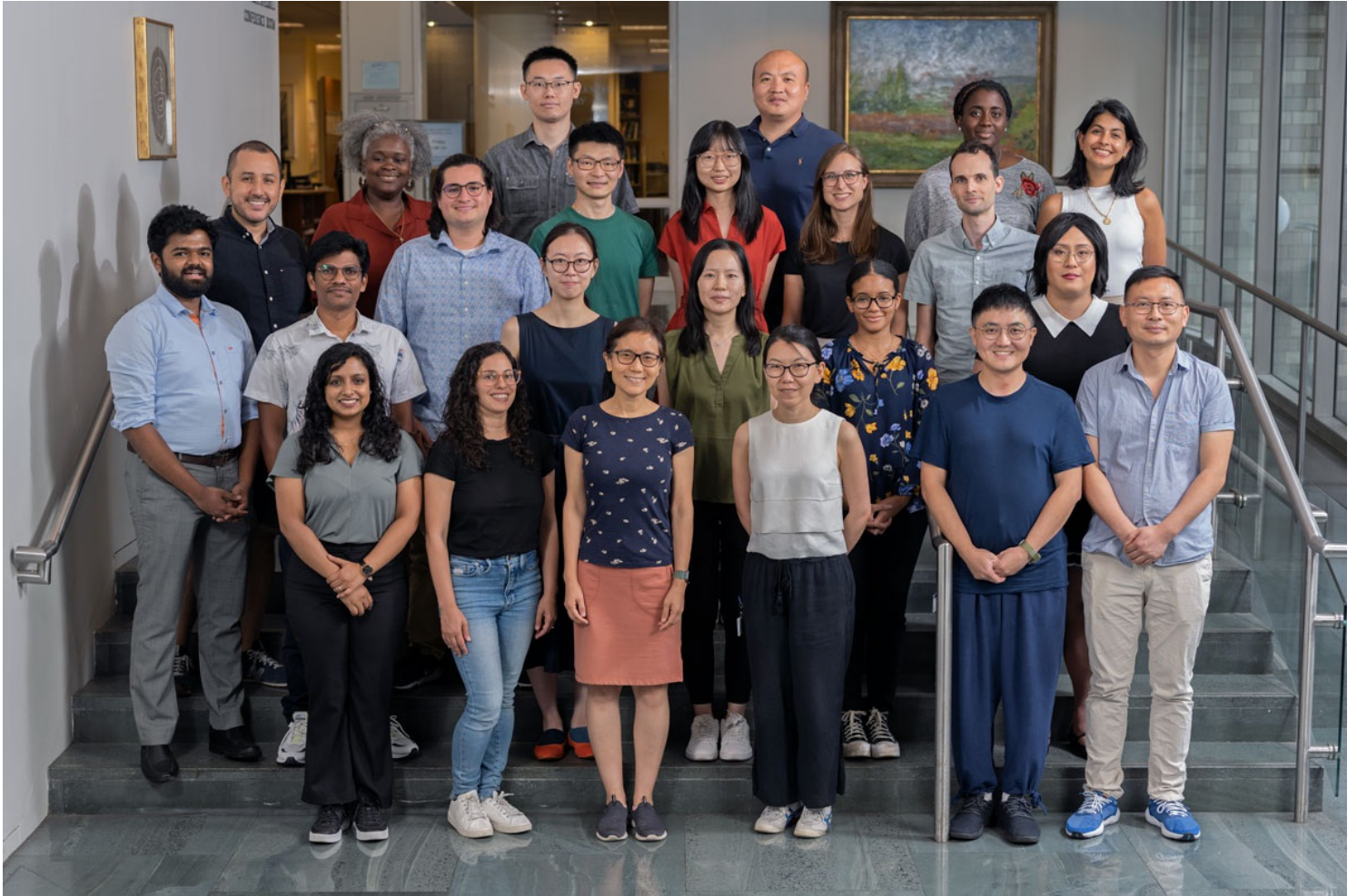
Research



Danwei Huangfu, PhD

We apply both precision gene editing and large-scale CRISPR screening in human pluripotent stem cells (hPSCs) to explore mechanisms underlying human development. Specifically, we are interrogating the protein-coding regulators of pancreatic development and β cell function. The pathways that regulate these processes can be exploited for therapeutics to prevent and reverse diseases such as type 1 and type 2 diabetes. In a second, closely related area, we are developing approaches to discover developmental enhancers, and to understand the epigenetic regulation of noncoding regulatory elements with a focus on DNA methylation.

[View Lab Overview](#) →



Featured News

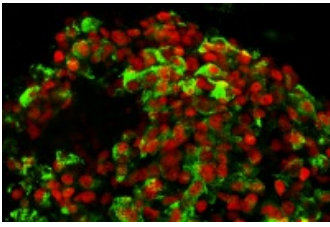
FINDING



[Stem Cell Research Unlocks a New Discovery about Controlling Genes](#)

Sloan Kettering Institute scientists report new findings about a gene that helps regulate DNA methylation.

IN THE LAB



[Scientists Use CRISPR to Learn How Cells Make Decisions](#)

The genome-editing technique uncovered several genes previously not known to influence embryonic development.

EVENT



[A Sneak Preview of Our Annual “Major Trends” Seminar Live Webcast](#)

Every year, MSK gives high school students and their teachers the opportunity to learn about cutting-edge biomedical research from our scientists.

[View All Featured News](#)

Publications Highlights

[Dynamic network-guided CRISPRi screen identifies CTCF-loop-constrained nonlinear enhancer gene regulatory activity during cell state transitions.](#) Luo R, Yan J, Oh JW, Xi W, Shigaki D, Wong W, Cho HS, Murphy D, Cutler R, Rosen BP, Pulecio J, Yang D, Glenn RA, Chen T, Li QV, Vierbuchen T, Sidoli S, Apostolou E, Huangfu D, Beer MA. Nat Genet. 2023 Aug;55(8):1336-1346. doi: 10.1038/s41588-023-01450-7. Epub 2023 Jul 24. [PMID: 37488417]

[CRISPR screening uncovers a central requirement for HHEX in pancreatic lineage commitment and plasticity restriction.](#) Yang D, Cho H, Tayyebi Z, Shukla A, Luo R, Dixon G, Ursu V, Stransky S, Tremmel DM, Sackett SD, Koche R, Kaplan SJ, Li QV, Park J, Zhu Z, Rosen BP, Pulecio J, Shi ZD, Bram Y, Schwartz RE, Odorico JS, Sidoli S, Wright CV, Leslie CS, Huangfu D. Nat Cell Biol. 2022 Jul;24(7):1064-1076. doi: 10.1038/s41556-022-00946-4. Epub 2022 Jul 4. [PMID: 35787684]

[QSER1 protects DNA methylation valleys from de novo methylation.](#) Dixon G, Pan H, Yang D, Rosen BP, Jashari T, Verma N, Pulecio J, Caspi I, Lee K, Stransky S, Glezer A, Liu C, Rivas M, Kumar R, Lan Y, Torregroza I, He C, Sidoli S, Evans T, Elemento O, Huangfu D. Science. 2021 Apr 9;372(6538):eabd0875. doi: 10.1126/science.abd0875. [PMID: 33833093]

[Genome-scale screens identify JNK-JUN signaling as a barrier for pluripotency exit and endoderm differentiation.](#) Li QV, Dixon G, Verma N, Rosen BP, Gordillo M, Luo R, Xu C, Wang Q, Soh CL, Yang D, Crespo M, Shukla A, Xiang Q, Dündar F, Zumbo P, Witkin M, Koche R, Betel D, Chen S, Massagué J, Garippa R, Evans T, Beer MA, Huangfu D. Nat Genet.

2019 Jun;51(6):999-1010. doi: 10.1038/s41588-019-0408-9. Epub 2019 May 20. [PMID: 31110351]

[TET proteins safeguard bivalent promoters from de novo methylation in human embryonic stem cells.](#) Verma N, Pan H, Doré LC, Shukla A, Li QV, Pelham-Webb B, Teijeiro V, González F, Krivtsov A, Chang CJ, Papapetrou EP, He C, Elemento O, Huangfu D. Nat Genet. 2018 Jan;50(1):83-95. doi: 10.1038/s41588-017-0002-y. Epub 2017 Dec 4.

[View All Publications](#)

People




Danwei Huangfu, PhD

The Huangfu laboratory uses human pluripotent stem cells (hPSCs) as a powerful genetic model to interrogate the transcriptional and epigenetic mechanisms underlying cell fate decisions in development and disease.

PhD, Cornell University, Weill Graduate School of Medical Sciences

BS, Fudan University

 huangfud@mskcc.org

Email Address

 [Download CV](#)

PDF File

Members



Adonis C. John

Lead, Research



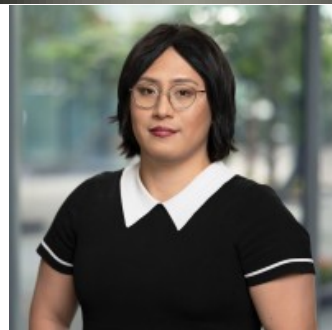
Sharon

Adeniyi



Tamara

Casteels



Hyein

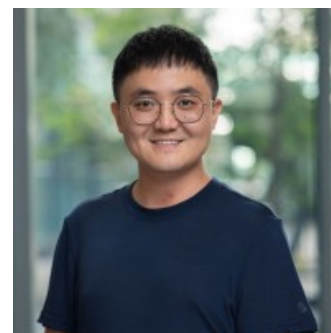
Cho

Administrative Assistant

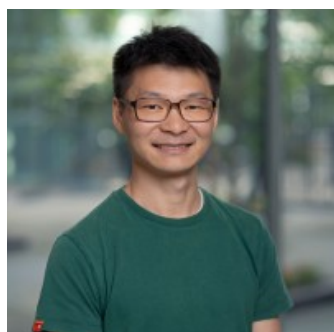
Research Technician

Research Fellow -
NYSTEM Training Award
at the CSCB

Sr. Computational
Biologist



Tingfeng
Guo
Research Fellow

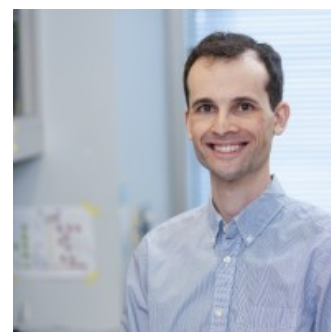


Nan
Hu
Bioinformatics Software
Engineer

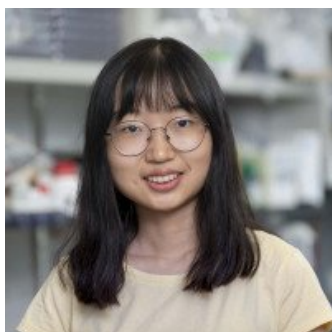


Hanuman Kale
Research Scholar

Sricharan
Kannan
Research Technician



Samuel Kaplan
Graduate Research
Assistant



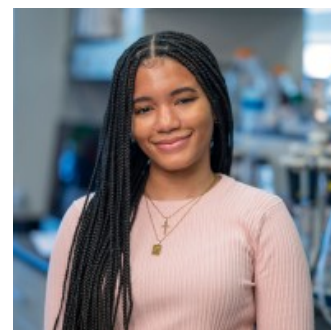
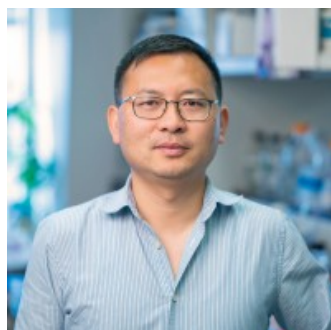
Dingyu Liu
Graduate Research
Assistant



Pallavi Mohapatra
Research Fellow



Arushi Rana
Research Technician

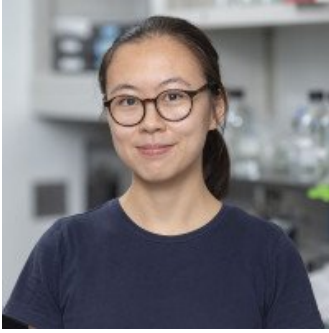


Xianming Wang

Research Fellow

Breanna Williams

Research Technician



Jieli Yan

Graduate Research
Assistant



Nan

Zhang

Research Fellow

Lab Alumni

+

Lab Affiliations

+

Achievements

Basil O'Connor Scholar, March of Dimes Birth Defects Foundation (2012-2014)

Louis V. Gerstner, Jr. Young Investigators Award, Memorial Sloan Kettering Cancer Center (2011-2014)

Award from Harvard Catalyst & InnoCentive for the Ideation Challenge on "What Do We Not Know to Cure Type 1 Diabetes" (2010)

Helen Hay Whitney Postdoctoral Fellowship (2006-2009)

Lab News & Events

ACCOLADES

Team Recognitions

Renhe Luo's paper on endoderm enhancer discovery is out in Nature Genetics (2023)

Jeyaram (Jey) Ravichandran Damodaran is joining the Weill Cornell BCMB program (2023)

Julian Pulecio is selected as a member of

the 2023 cohort of MERIT Emerging Leaders

Dingyu Liu receives the Bruce Charles Forbes Fellowship (2023)

Tamara Casteels receives the NYSTEM Training Award at the CSCB (2022)

Tamara Casteels receives the Award of Excellence for her PhD thesis with Stefan Kubicek in CeMM (2022)

Nan Zhang receives CDMRP PRMRP Discovery Award (2022)

Dapeng Yang's paper on HHEX and pancreas specification is out in Nature Cell Biology (2022)

Open Positions

To learn more about available postdoctoral opportunities, please visit our [Career Center](#)

To learn more about compensation and benefits for postdoctoral researchers at MSK, please visit [Resources for Postdocs](#)

Graduate Student, Postdoctoral Fellow, Research Technician and Project Manager

[Apply now](#) →

Get in Touch

✉ huangfud@mskcc.org

Lab Head Email

☎ [212-639-5240](tel:212-639-5240)

Lab Phone

Disclosures

Doctors and faculty members often work with pharmaceutical, device, biotechnology, and life sciences companies, and other organizations outside of MSK, to find safe and effective cancer treatments, to improve patient care, and to educate the health care community.

MSK requires doctors and faculty members to report (“disclose”) the relationships and financial interests they have with external entities. As a commitment to transparency with our community, we make that information available to the public.

Danwei Huangfu discloses the following relationships and financial interests:

Gene and Genome Editing

Professional Services and Activities (Uncompensated)

Stem Cell Reports

Professional Services and Activities (Uncompensated)

The Jackson Laboratory

Professional Services and Activities

The information published here is for a specific annual disclosure period. There may be differences between information on this and other public sites as a result of different reporting periods and/or the various ways relationships and financial interests are categorized by organizations that publish such data.

This page and data include information for a specific MSK annual disclosure period (January 1, 2022 through disclosure submission in spring 2023). This data reflects interests that may or may not still exist. This data is updated annually.

Learn more about MSK's COI policies [here](#). For questions regarding MSK's COI-related policies and procedures, email MSK's Compliance Office at ecoi@mskcc.org.

[View all disclosures](#) →

▾ About Us

[Overview](#)

[Leadership](#)

[Administration](#)

[History](#)

[Contact Us](#)



▾ Research

[Overview](#)

[Research programs](#)

[Research labs](#)

[Core facilities & resources](#)

▾ Education & Training

[Overview](#)

[Postdoctoral training](#)

[Gerstner Sloan Kettering Graduate School](#)

[Joint graduate programs](#)

[Programs for college & high school students](#)

▾ News & Events

[Overview](#)

[Seminars & events](#)

▾ Open Positions

[Overview](#)

[Faculty positions](#)

[Postdoctoral positions](#)

[Communication preferences](#)

[Cookie preferences](#)

[Legal disclaimer](#)

[Accessibility Statement](#)

[Privacy policy](#)

[Public notices](#)

© 2024 Memorial Sloan Kettering Cancer Center