Stanford



Fabian Suchy

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Bio

PROFESSIONAL EDUCATION

- Doctor of Philosophy, Stanford University , STMRM-PHD (2021)
- BS, University of Wisconsin, Madison , Molecular Biology (2012)

STANFORD ADVISORS

- Hiro Nakauchi, Postdoctoral Research Mentor

Publications

PUBLICATIONS

- **Xenophagocytosis blockade enhances interspecies chimerism.** *Cell*
  Wang, S., Niizuma, K., Liu, D. D., Suchy, F. P., Chang, A. H., Tabatabaee, S., Sato, H., Yanagida, A., Masaki, H., Hidajat, N., Homma, S., Miyauchi, M., Bhadury, et al
  2026

- **DNMT3A R882H Is Not Required for Disease Maintenance in Primary Human AML, but Is Associated With Increased Leukemia Stem Cell Frequency.** *Cancer discovery*
  Köhnke, T., Karigane, D., Hilgart, E., Fan, A. C., Kayamori, K., Miyauchi, M., Collins, C. T., Suchy, F. P., Rangavajhula, A., Feng, Y., Nakauchi, Y., Martinez-Montes, E., Fowler, et al
  2025

- **FLT3 ligand facilitates long-term ex vivo expansion of human hematopoietic stem cells by maintaining lymphoid reconstitution potential**
  Miyauchi, M., Banuelos, A., Mack, P., Suchy, F., Tan, T., Charlesworth, C., Homma, S., Zhang, J., Kayamori, K., Yilmaz, L., Bhadury, J., Karigane, D., Nakauchi, et al
  ELSEVIER.2025: 4931-4932

- **Aberrant cell cycle regulation and osteoblastic differentiation in diamond-blackfan anemia (DBA) mesenchymal stem cells**
  Kim, H., Viduya, J., Youm, J., Mark, K., Liu, L., Suchy, F., Nakauchi, H., Shyr, D., Goyal, A., Glader, B., Wu, J. Y., Sakamoto, K.
  ELSEVIER.2025: 747-748

- **Intra-leukemic interferon signaling suppresses expansion and mediates chemoresistance in human AML.** *Blood cancer discovery*
  Karigane, D., Fan, A. C., Nishimura, T., Kayamori, K., Nakauchi, Y., Köhnke, T., Rangavajhula, A., Ediriwickrema, A., Benard, B. A., Thomas, R., Zhao, F., Stafford, M., Suchy, et al
  2025

- **Xenophagocytosis blockade enhances interspecies chimerism.** *bioRxiv : the preprint server for biology*
  Wang, S., Niizuma, K., Liu, D. D., Suchy, F. P., Sato, H., Yanagida, A., Masaki, H., Miyauchi, M., Tabatabaee, S., Hidajat, N., Bhadury, J., Charlesworth, C. T., Zhang, et al
  2025

- **Highly efficient in vivo hematopoietic stem cell transduction using an optimized self-complementary adeno-associated virus** *MOLECULAR THERAPY METHODS & CLINICAL DEVELOPMENT*
  Charlesworth, C. T., Homma, S., Amaya, A. K., Dib, C., Vaidyanathan, S., Tan, T., Miyauchi, M., Nakauchi, Y., Suchy, F. P., Wang, S., Igarashi, K. J., Cromer, M., Dudek, et al
  2025; 33 (1)

- **Highly efficient in vivo hematopoietic stem cell transduction using an optimized self-complementary adeno-associated virus.** *Molecular therapy. Methods & clinical development*
  Charlesworth, C. T., Homma, S., Amaya, A. K., Dib, C., Vaidyanathan, S., Tan, T. K., Miyauchi, M., Nakauchi, Y., Suchy, F. P., Wang, S., Igarashi, K. J., Cromer, M. K., Dudek, et al
  2025; 33 (1): 101438

- **DNMT3AR882H Is Not Required for Disease Maintenance in Primary Human AML, but Is Associated With Increased Leukemia Stem Cell Frequency.** *bioRxiv : the preprint server for biology*
  Köhnke, T., Karigane, D., Hilgart, E., Fan, A. C., Kayamori, K., Miyauchi, M., Collins, C. T., Suchy, F. P., Rangavajhula, A., Feng, Y., Nakauchi, Y., Martinez-Montes, E., Fowler, et al
  2024

- **Secreted Particle Information Transfer (SPIT) - A Cellular Platform for In Vivo Genetic Engineering.** *Research square*
  Charlesworth, C. T., Homma, S., Suchy, F., Wang, S., Bhadhury, J., Amaya, A. K., Camarena, J., Zhang, J., Tan, T. K., Igarashi, K., Nakauchi, H.
  2024

- **HYPDXIC/SCF-SUPPLEMENTED CULTURE IN POLYMER-BASED MEDIUM ENABLES STABLE EX VIVO HUMAN HEMATOPOIETIC STEM CELL EXPANSION**
  Miyauchi, M., Mack, P., Bhadury, J., Tan, A., Suchy, F., Zhang, J., Charlesworth, C., Homma, S., Karigane, D., Nakauchi, H.
  ELSEVIER SCIENCE INC.2024

- **Skin graft with dermis and appendages generated in vivo by cell competition.** *Nature communications*
  Nagano, H., Mizuno, N., Sato, H., Mizutani, E., Yanagida, A., Kano, M., Kasai, M., Yamamoto, H., Watanabe, M., Suchy, F., Masaki, H., Nakauchi, H.
  2024; 15 (1): 3366

- **Unwanted Concatemeric Knock-Ins Occur Frequently with Cas9/AAV-Mediated Gene-Editing: Detection and Prevention**
  Suchy, F. P., Karigane, D., Nakauchi, Y., Higuchi, M., Zhang, J., Pekrun, K., Hsu, I., Fan, A. C., Nishimura, T., Charlesworth, C. T., Bhadury, J., Nishimura, T., Wilkinson, et al
  CELL PRESS.2024: 211-212

- **Genome engineering with Cas9 and AAV repair templates generates frequent concatemeric insertions of viral vectors.** *Nature biotechnology*
  Suchy, F. P., Karigane, D., Nakauchi, Y., Higuchi, M., Zhang, J., Pekrun, K., Hsu, I., Fan, A. C., Nishimura, T., Charlesworth, C. T., Bhadury, J., Nishimura, T., Wilkinson, et al
  2024

- **Secreted Particle Information Transfer (SPIT) - A Cellular Platform forIn VivoGenetic Engineering.** *bioRxiv : the preprint server for biology*
  Charlesworth, C. T., Homma, S., Suchy, F., Wang, S., Bhadhury, J., Amaya, A. K., Camarena, J., Zhang, J., Tan, T. K., Igarishi, K., Nakauchi, H.
  2024

- **Gene Correction of DNMT3A:R882H in Primary Human AML Demonstrates That This Mutation Is Not Required for Disease Maintenance, but Is Associated with Increased Leukemia Stem Cell Frequency**
  Koehnke, T., Karigane, D., Hilgart, E., Kayamori, K., Fan, A. C., Collins, C. T., Suchy, F. P., Rangavajhula, A. S., Feng, Y., Nakauchi, Y., Martinez-Montes, E., Koldobskiy, M., Feinberg, et al
  AMER SOC HEMATOLOGY.2023

- **Removal of sperm tail using trypsin and pre-activation of oocyte facilitates intracytoplasmic sperm injection in mice and rats** *JOURNAL OF REPRODUCTION AND DEVELOPMENT*
  Torikai, K., Shimizu, K., Nagatomo, H., Kasai, M., Kato-itoh, M., Kamada, Y., Shibasaki, I., Jeon, H., Kikuchi, R., Wakayama, S., Suchy, F., Nakauchi, H., Wakayama, et al
  2023; 69 (1): 48-52

- **Removal of sperm tail using trypsin and pre-activation of oocyte facilitates intracytoplasmic sperm injection in mice and rats.** *The Journal of reproduction and development*
  Torikai, K., Shimizu, K., Nagatomo, H., Kasai, M., Kato-Itoh, M., Kamada, Y., Shibasaki, I., Jeon, H., Kikuchi, R., Wakayama, S., Suchy, F., Nakauchi, H., Wakayama, et al

2022

- **Chimpanzee and pig-tailed macaque iPSCs: Improved culture and generation of primate cross-species embryos.** *Cell reports*
  Roodgar, M., Suchy, F. P., Nguyen, L. H., Bajpai, V. K., Sinha, R., Vilches-Moure, J. G., Van Bortle, K., Bhadury, J., Metwally, A., Jiang, L., Jian, R., Chiang, R., Oikonomopoulos, et al
  2022; 40 (9): 111264

- **Streamlined and quantitative detection of chimerism using digital PCR.** *Scientific reports*
  Suchy, F. P., Nishimura, T., Seki, S., Wilkinson, A. C., Higuchi, M., Hsu, I., Zhang, J., Bhadury, J., Nakauchi, H.
  2022; 12 (1): 10223

- **Generating human artery and vein cells from pluripotent stem cells highlights the arterial tropism of Nipah and Hendra viruses.** *Cell*
  Ang, L. T., Nguyen, A. T., Liu, K. J., Chen, A., Xiong, X., Curtis, M., Martin, R. M., Raftry, B. C., Ng, C. Y., Vogel, U., Lander, A., Lesch, B. J., Fowler, et al
  2022

- **Generation of Functional Organs Using a Cell-Competitive Niche in Intra- and Inter-species Rodent Chimeras.** *Cell stem cell*
  Nishimura, T., Suchy, F. P., Bhadury, J., Igarashi, K. J., Charlesworth, C. T., Nakauchi, H.
  2020

- **Sufficiency for inducible Caspase-9 safety switch in human pluripotent stem cells and disease cells.** *Gene therapy*
  Nishimura, T., Xu, H., Iwasaki, M., Karigane, D., Saavedra, B., Takahashi, Y., Suchy, F. P., Monobe, S., Martin, R. M., Ohtaka, M., Nakanishi, M., Burrows, S. R., Cleary, et al
  2020

- **Mosaicism diminishes the value of pre-implantation embryo biopsies for detecting CRISPR/Cas9 induced mutations in sheep** *TRANSGENIC RESEARCH*
  Vilarino, M., Suchy, F., Rashid, S., Lindsay, H., Reyes, J., McNabb, B., van der Meulen, T., Huising, M. O., Nakauchi, H., Ross, P.
  2018; 27 (6): 525-537

- **Intra-embryo Gene Cassette Knockin by CRISPR/Cas9-Mediated Genome Editing with Adeno-Associated Viral Vector** *ISCIENCE*
  Mizuno, N., Mizutani, E., Sato, H., Kasai, M., Ogawa, A., Suchy, F., Yamaguchi, T., Nakauchi, H.
  2018; 9: 286-+

- **Intra-embryo Gene Cassette Knockin by CRISPR/Cas9-Mediated Genome Editing with Adeno-Associated Viral Vector.** *iScience*
  Mizuno, N., Mizutani, E., Sato, H., Kasai, M., Ogawa, A., Suchy, F., Yamaguchi, T., Nakauchi, H.
  2018; 9: 286–97

- **An interspecies barrier to tetraploid complementation and chimera formation** *SCIENTIFIC REPORTS*
  Yamaguchi, T., Sato, H., Kobayashi, T., Kato-itoh, M., Goto, T., Hara, H., Mizuno, N., Yanagida, A., Umino, A., Hamanaka, S., Suchy, F., Masaki, H., Ota, et al
  2018; 8: 15289

- **Generation of Vascular Endothelial Cells and Hematopoietic Cells by Blastocyst Complementation** *STEM CELL REPORTS*
  Hamanaka, S., Umino, A., Sato, H., Hayama, T., Yanagida, A., Mizuno, N., Kobayashi, T., Kasai, M., Suchy, F., Yamazaki, S., Masaki, H., Yamaguchi, T., Nakauchi, et al
  2018; 11 (4): 988–97

- **Mosaicism diminishes the value of pre-implantation embryo biopsies for detecting CRISPR/Cas9 induced mutations in sheep.** *Transgenic research*
  Vilarino, M., Suchy, F. P., Rashid, S. T., Lindsay, H., Reyes, J., McNabb, B. R., van der Meulen, T., Huising, M. O., Nakauchi, H., Ross, P. J.
  2018

- **Interspecies chimeras.** *Current opinion in genetics & development*
  Suchy, F., Nakauchi, H.
  2018; 52: 36–41

- **iPSC-Derived Organs In Vivo: Challenges and Promise** *CELL STEM CELL*
  Suchy, F., Yamaguchi, T., Nakauchi, H.
  2018; 22 (1): 21–24

- **CRISPR/Cas9 microinjection in oocytes disables pancreas development in sheep** *SCIENTIFIC REPORTS*
  Vilarino, M., Rashid, S., Suchy, F., McNabb, B., van der Meulen, T., Fine, E. J., Ahsan, S., Mursaliyev, N., Sebastiano, V., Diab, S., Huising, M. O., Nakauchi, H., Ross, et al
  2017; 7: 17472

- **Rapid Chromatin Switch in the Direct Reprogramming of Fibroblasts to Neurons** *CELL REPORTS*
  Wapinski, O. L., Lee, Q., Chen, A. C., Li, R., Corces, M., Ang, C., Treutlein, B., Xiang, C., Baubet, V., Suchy, F., Sankar, V., Sim, S., Quake, et al
  2017; 20 (13): 3236–47

- **Lessons from Interspecies Mammalian Chimeras** *ANNUAL REVIEW OF CELL AND DEVELOPMENTAL BIOLOGY, VOL 33*
  Suchy, F., Nakauchi, H.
  edited by Schekman, R.
  2017; 33: 203–17

- **The Oligomeric States of the Purified Sigma-1 Receptor Are Stabilized by Ligands** *JOURNAL OF BIOLOGICAL CHEMISTRY*
  Gromek, K. A., Suchy, F. P., Meddaugh, H. R., Wrobel, R. L., Lapointe, L. M., Chu, U. B., Primm, J. G., Ruoho, A. E., Senes, A., Fox, B. G.
  2014; 289 (29): 20333-20344

- **Solution Structure of the 2A Protease from a Common Cold Agent, Human Rhinovirus C2, Strain W12** *PLOS ONE*
  Lee, W., Watters, K. E., Troupis, A. T., Reinen, N. M., Suchy, F. P., Moyer, K. L., Frederick, R. O., Tonelli, M., Aceti, D. J., Palmenberg, A. C., Markley, J. L.
  2014; 9 (6)

- **Improved expression and purification of sigma 1 receptor fused to maltose binding protein by alteration of linker sequence** *PROTEIN EXPRESSION AND PURIFICATION*
  Gromek, K. A., Meddaugh, H. R., Wrobel, R. L., Suchy, F. P., Bingman, C. A., Primm, J. G., Fox, B. G.
  2013; 89 (2): 203-209