

## Reviews

Shahbazi, M. N. and Zernicka-Goetz, M. (2018). Deconstructing and reconstructing the mouse and human early embryo. *Nat. Cell Biol.* 20, 878-887.

## Policy/Ethics

Appleby, J. B. and Bredenoord, A. L. (2018). Should the 14-day rule for embryo research become the 28-day rule? *EMBO Mol. Med.* e9437. doi: 10.15252/emmm.201809437.

## Protocols

Ray, A., Morford, R. K. and Provenzano, P. P. Cancer Stem Cell Migration in Three-Dimensional Aligned Collagen Matrices. *Curr. Protoc. Stem Cell Biol.* 46, e57.

## Research Articles

Abel, E. V, Goto, M., Magnuson, B., Abraham, S., Ramanathan, N., Hotaling, E., Alaniz, A. A., Kumar-Sinha, C., Dziubinski, M. L., Urs, S., et al. (2018). HNF1A is a novel oncogene that regulates human pancreatic cancer stem cell properties. *Elife* 7, e33947.

AbuZineh, K., Joudeh, L. I., Al Alwan, B., Hamdan, S. M., Merzaban, J. S. and Habuchi, S. (2018). Microfluidics-based super-resolution microscopy enables nanoscopic characterization of blood stem cell rolling. *Sci. Adv.* 4, eaat5304.

Andersen, P., Tampakakis, E., Jimenez, D. V., Kannan, S., Miyamoto, M., Shin, H. K., Saberi, A., Murphy, S., Sulistio, E., Chelko, S. P., et al. (2018). Precardiac organoids form two heart fields via Bmp/Wnt signaling. *Nat. Commun.* 9, 3140.

Ayabe, H., Anada, T., Kamoya, T., Sato, T., Kimura, M., Yoshizawa, E., Kikuchi, S., Ueno, Y., Sekine, K., Camp, J. G., et al. (2018). Optimal Hypoxia Regulates Human iPSC-Derived Liver Bud Differentiation through Intercellular TGFB Signaling. *Stem Cell Reports*. doi: 10.1016/j.stemcr.2018.06.015.

Barakat, T. S., Halbritter, F., Zhang, M., Rendeiro, A. F., Perenthaler, E., Bock, C. and Chambers, I. (2018). Functional Dissection of the Enhancer Repertoire in Human Embryonic Stem Cells. *Cell Stem Cell* 23, 276–288.e8.

Bhagat, R., Prajapati, B., Narwal, S., Agnihotri, N., Adlakha, Y. K., Sen, J., Mani, S. and Seth, P. (2018). Zika virus E protein alters the properties of human fetal neural stem cells by modulating microRNA circuitry. *Cell Death Differ.* doi: https://doi.org/10.1038/s41418-018-0163-y

Bian, S., Repic, M., Guo, Z., Kavirayani, A., Burkard, T., Bagley, J. A., Krauditsch, C. and Knoblich, J. A. (2018). Genetically engineered cerebral organoids model brain tumor formation. *Nat. Methods* 15, 631–639.

- Calabretta, S., Vogel, G., Yu, Z., Choquet, K., Darbelli, L., Nicholson, T. B., Kleinman, C. L. and Richard, S. (2018). Loss of PRMT5 Promotes PDGFR3b1; Degradation during Oligodendrocyte Differentiation and Myelination. *Dev. Cell*. doi: 10.1016/j.devcel.2018.06.025.
- Carruthers, R. D., Ahmed, S. U., Ramachandran, S., Strathdee, K., Kurian, K. M., Hedley, A., Gomez-Roman, N., Kalna, G., Neilson, M. P., Gilmour, L., et al. (2018). Replication stress drives constitutive activation of the DNA damage response and radioresistance in glioblastoma stem-like cells. *Cancer Res*. canres.0569.2018.
- Cazet, A. S., Hui, M. N., Elsworth, B. L., Wu, S. Z., Roden, D., Chan, C. L., Skhinas, J. N., Collot, R., Yang, J., Harvey, K., et al. (2018). Targeting stromal remodeling and cancer stem cell plasticity overcomes chemoresistance in triple negative breast cancer. *Nat. Commun.* 9, 2897.
- Chen, A. F., Liu, A. J., Krishnakumar, R., Freimer, J. W., DeVeale, B. and Blelloch, R. (2018). GRHL2-Dependent Enhancer Switching Maintains a Pluripotent Stem Cell Transcriptional Subnetwork after Exit from Naive Pluripotency. *Cell Stem Cell* 23, 226–238.e4.
- Cho, B., Spratford, C. M., Yoon, S., Cha, N., Banerjee, U. and Shim, J. (2018). Systemic control of immune cell development by integrated carbon dioxide and hypoxia chemosensation in Drosophila. *Nat. Commun.* 9, 2679.
- Conine, C. C., Sun, F., Song, L., Rivera-Pérez, J. A. and Rando, O. J. (2018). Small RNAs Gained during Epididymal Transit of Sperm Are Essential for Embryonic Development in Mice. *Dev. Cell*. doi: <https://doi.org/10.1016/j.devcel.2018.06.024>.
- Cunha-Ferreira, I., Chazeau, A., Buijs, R. R., Stucchi, R., Will, L., Pan, X., Adolfs, Y., van der Meer, C., Wolthuis, J. C., Kahn, O. I., et al. (2018). The HAUS Complex Is a Key Regulator of Non-centrosomal Microtubule Organization during Neuronal Development. *Cell Rep.* 24, 791–800.
- D'Antonio, M., Benaglio, P., Jakubosky, D., Greenwald, W. W., Matsui, H., Donovan, M. K. R., Li, H., Smith, E. N., D'Antonio-Chronowska, A. and Frazer, K. A. (2018). Insights into the Mutational Burden of Human Induced Pluripotent Stem Cells from an Integrative Multi-Omics Approach. *Cell Rep.* 24, 883–894.
- Dambournet, D., Sochacki, K. A., Cheng, A. T., Akamatsu, M. S., Taraska, J. W., Hockemeyer, D. and Drubin, D. G. (2018). Genome-edited human stem cells expressing fluorescently labeled endocytic markers allow quantitative analysis of clathrin-mediated endocytosis during differentiation. *J. Cell Biol.* doi: 10.1083/jcb.201710084.
- Desai, P., Mencia-Trinchant, N., Savenkov, O., Simon, M. S., Cheang, G., Lee, S., Samuel, M., Ritchie, E. K., Guzman, M. L., Ballman, K. V., et al. (2018). Somatic mutations precede acute myeloid leukemia years before diagnosis. *Nat. Med.* 24, 1015–1023.

- Duncan, G. J., Manesh, S. B., Hilton, B. J., Assinck, P., Liu, J., Moulson, A., Plemel, J. R. and Tetzlaff, W. (2018). Locomotor recovery following contusive spinal cord injury does not require oligodendrocyte remyelination. *Nat. Commun.* **9**, 3066.
- Freimer, J., Hu, T. and Blesch, R. (2018). Decoupling the impact of microRNAs on translational repression versus RNA degradation in embryonic stem cells. *eLife.* **2018**;7:e38014.
- Furey, C. G., Choi, J., Jin, S. C., Zeng, X., Timberlake, A. T., Nelson-Williams, C., Mansuri, M. S., Lu, Q., Duran, D., Panchagnula, S., et al. (2018). De Novo Mutation in Genes Regulating Neural Stem Cell Fate in Human Congenital Hydrocephalus. *Neuron.* **99**, 302-314.
- Geng, A., Qiu, R., Murai, K., Liu, J., Wu, X., Zhang, H., Farhoodi, H., Duong, N., Jiang, M., Yee, J. K., et al. (2018). KIF20A/MKLP2 regulates the division modes of neural progenitor cells during cortical development. *Nat. Commun.* **9**, 2707.
- Gomariz, A., Helbling, P. M., Isringhausen, S., Suessbier, U., Becker, A., Boss, A., Nagasawa, T., Paul, G., Goksel, O., Székely, G., et al. (2018). Quantitative spatial analysis of haematopoiesis-regulating stromal cells in the bone marrow microenvironment by 3D microscopy. *Nat. Commun.* **9**, 2532.
- Grevet, J. D., Lan, X., Hamagami, N., Edwards, C. R., Sankaranarayanan, L., Ji, X., Bhardwaj, S. K., Face, C. J., Posocco, D. F., Abdulmalik, O., et al. (2018). Domain-focused CRISPR screen identifies HRI as a fetal hemoglobin regulator in human erythroid cells. *Science.* **361**, 285–290.
- Griffiths, J. A., Richard, A. C., Bach, K., Lun, A. T. L. and Marioni, J. C. (2018). Detection and removal of barcode swapping in single-cell RNA-seq data. *Nat. Commun.* **9**, 2667.
- Gu, T., Lin, X., Cullen, S. M., Luo, M., Jeong, M., Estecio, M., Shen, J., Hardikar, S., Sun, D., Su, J., et al. (2018). DNMT3A and TET1 cooperate to regulate promoter epigenetic landscapes in mouse embryonic stem cells. *Genome Biol.* **19**, 88.
- Guhr, A., Kobold, S., Seltmann, S., Seiler Wulczyn, A. E. M., Kurtz, A. and Löser, P. (2018). Recent Trends in Research with Human Pluripotent Stem Cells: Impact of Research and Use of Cell Lines in Experimental Research and Clinical Trials. *Stem Cell Reports.* doi: [10.1016/j.stemcr.2018.06.012](https://doi.org/10.1016/j.stemcr.2018.06.012).
- Guo, R., Ye, X., Yang, J., Zhou, Z., Tian, C., Wang, H., Wang, H., Fu, H., Liu, C., Zeng, M., et al. (2018). Feeders facilitate telomere maintenance and chromosomal stability of embryonic stem cells. *Nat. Commun.* **9**, 2620.
- H Lin, Q Du, Q Li, O Wang, Y. L. (2018). A Scalable and Efficient Bioprocess for Manufacturing Human Pluripotent Stem Cells-Derived Endothelial Cells. *Stem Cell Reports* doi: [10.1016/j.stemcr.2018.07.001](https://doi.org/10.1016/j.stemcr.2018.07.001).

- Haider, S., Meinhardt, G., Saleh, L., Kunihs, V., Gamperl, M., Kaindl, U., Ellinger, A., Burkard, T. R., Fiala, C., Pollheimer, J., et al. (2018). Self-Renewing Trophoblast Organoids Recapitulate the Developmental Program of the Early Human Placenta. *Stem Cell Reports*. doi: [10.1016/j.stemcr.2018.07.004](https://doi.org/10.1016/j.stemcr.2018.07.004).
- Harrison, S. E., Sozen, B. and Zernicka-Goetz, M. (2018). In vitro generation of mouse polarized embryo-like structures from embryonic and trophoblast stem cells. *Nat. Protoc.* 13, 1586–1602.
- Hastreiter, S., Skylaki, S., Loeffler, D., Reimann, A., Hilsenbeck, O., Hoppe, P. S., Coutu, D. L., Kokkaliaris, K. D., Schwarzfischer, M., Anastassiadis, K., et al. (2018). Inductive and Selective Effects of GSK3 and MEK Inhibition on Nanog Heterogeneity in Embryonic Stem Cells. *Stem Cell Reports* 11, 58–69.
- Helsen, C. W., Hammill, J. A., Lau, V. W. C., Mwawasi, K. A., Afsahi, A., Bezverbnaya, K., Newhook, L., Hayes, D. L., Aarts, C., Bojovic, B., et al. (2018). The chimeric TAC receptor co-opts the T cell receptor yielding robust anti-tumor activity without toxicity. *Nat. Commun.* 9, 3049.
- Horlbeck, M. A., Xu, A., Wang, M., Bennett, N. K., Park, C. Y., Bogdanoff, D., Adamson, B., Chow, E. D., Kampmann, M., Peterson, T. R., et al. (2018). Mapping the Genetic Landscape of Human Cells. *Cell*. 174, 953-967.
- Huang, X., Guo, B., Liu, S., Wan, J. and Broxmeyer, H. E. (2018). Neutralizing negative epigenetic regulation by HDAC5 enhances human haematopoietic stem cell homing and engraftment. *Nat. Commun.* 9, 2741.
- Hubler, Z., Allimuthu, D., Bederman, I., Elitt, M. S., Madhavan, M., Allan, K. C., Shick, H. E., Garrison, E., T. Karl, M., Factor, D. C., et al. (2018). Accumulation of 8,9-unsaturated sterols drives oligodendrocyte formation and remyelination. *Nature*. doi: <https://doi.org/10.1038/s41586-018-0360-3>.
- Hui, T., Cao, Q., Wegrzyn-Woltosz, J., O'Neill, K., Hammond, C. A., Knapp, D. J. H. F., Laks, E., Moksa, M., Aparicio, S., Eaves, C. J., et al. (2018). High-Resolution Single-Cell DNA Methylation Measurements Reveal Epigenetically Distinct Hematopoietic Stem Cell Subpopulations. *Stem Cell Reports*. doi: [10.1016/j.stemcr.2018.07.003](https://doi.org/10.1016/j.stemcr.2018.07.003).
- Imran Alsous, J., Villoutreix, P., Stoop, N., Shvartsman, S. Y. and Dunkel, J. (2018). Entropic effects in cell lineage tree packings. *Nat. Phys.* 1–6.
- Ito, Y., Nakamura, S., Sugimoto, N., Shigemori, T., Kato, Y., Ohno, M., Sakuma, S., Ito, K., Kumon, H., Hirose, H., et al. (2018). Turbulence Activates Platelet Biogenesis to Enable Clinical Scale Ex Vivo Production. *Cell* 174, 636–648.e18.

- Jin, M., O’Nuallain, B., Hong, W., Boyd, J., Lagomarsino, V. N., O’Malley, T. T., Liu, W., Vanderburg, C. R., Frosch, M. P., Young-Pearse, T., et al. (2018). An in vitro paradigm to assess potential anti-A $\beta$  antibodies for Alzheimer’s disease. *Nat. Commun.* **9**, 2676.
- Jung, K. B., Lee, H., Son, Y. S., Lee, M.-O., Kim, Y.-D., Oh, S. J., Kwon, O., Cho, S., Cho, H.-S., Kim, D.-S., et al. (2018). Interleukin-2 induces the in vitro maturation of human pluripotent stem cell-derived intestinal organoids. *Nat. Commun.* **9**, 3039.
- Kalhor, R., Kalhor, K., Mejia, L., Leeper, K., Graveline, A., Mali, P. and Church, G. M. (2018). Developmental barcoding of whole mouse via homing CRISPR. *Science*. doi: 10.1126/science.aat9804.
- Kaur, S., Raggatt, L. J., Millard, S. M., Wu, A. C., Batoon, L., Jacobsen, R. N., Winkler, I. G., MacDonald, K. P., Perkins, A. C., Hume, D. A., et al. (2018). Self-repopulating recipient bone marrow resident macrophages promote long-term hematopoietic stem cell engraftment. *Blood* blood-2018-01-829663.
- Kelly, S. M., Raudales, R., He, M., Lee, J. H., Kim, Y., Gibb, L. G., Wu, P., Matho, K., Osten, P., Graybiel, A. M., et al. (2018). Radial Glial Lineage Progression and Differential Intermediate Progenitor Amplification Underlie Striatal Compartments and Circuit Organization. *Neuron* **99**, 345–361.e4.
- Kerosuo, L., Neppala, P., Hsin, J., Mohlin, S., Vieceli, F. M., Török, Z., Laine, A., Westermarck, J. and Bronner, M. E. (2018). Enhanced expression of MycN/CIP2A drives neural crest toward a neural stem cell-like fate: Implications for priming of neuroblastoma. *Proc. Natl. Acad. Sci.* **115**, 201800039.
- Kishimoto, K., Tamura, M., Nishita, M., Minami, Y., Yamaoka, A., Abe, T., Shigeta, M. and Morimoto, M. (2018). Synchronized mesenchymal cell polarization and differentiation shape the formation of the murine trachea and esophagus. *Nat. Commun.* **9**, 2816.
- Kosicki, M., Tomberg, K. and Bradley, A. (2018). Repair of double-strand breaks induced by CRISPR–Cas9 leads to large deletions and complex rearrangements. *Nat. Biotechnol.* **36**, 765-771.
- Kourtis, N., Lazaris, C., Hockemeyer, K., Balandrán, J. C., Jimenez, A. R., Mullenders, J., Gong, Y., Trimarchi, T., Bhatt, K., Hu, H., et al. (2018). Oncogenic hijacking of the stress response machinery in T cell acute lymphoblastic leukemia. *Nat. Med.* **24**, 1157-1166.
- Koyuncu, S., Saez, I., Lee, H. J., Gutierrez-Garcia, R., Pokrzywa, W., Fatima, A., Hoppe, T. and Vilchez, D. (2018). The ubiquitin ligase UBR5 suppresses proteostasis collapse in pluripotent stem cells from Huntington’s disease patients. *Nat. Commun.* **9**, 2886.
- Kubara, K., Yamazaki, K., Ishihara, Y., Naruto, T., Lin, H. T., Nishimura, K., Ohtaka, M., Nakanishi, M., Ito, M., Tsukahara, K., et al. (2018). Status of KRAS in iPSCs Impacts upon Self-Renewal and Differentiation Propensity. *Stem Cell Reports.* **S2213-6711(18)30271-6.**

- Kumamaru, H., Kadoya, K., Adler, A. F., Takashima, Y., Graham, L., Coppola, G. and Tuszyński, M. H. (2018). Generation and post-injury integration of human spinal cord neural stem cells. *Nat. Methods*. doi: 10.1038/s41592-018-0074-3.
- La Manno, G., Soldatov, R., Zeisel, A., Braun, E., Hochgerner, H., Petukhov, V., Lidschreiber, K., Kastrioti, M. E., Lönnerberg, P., Furlan, A., et al. (2018). RNA velocity of single cells. *Nature*. doi: 10.1038/s41586-018-0414-6.
- La, H. M., Mäkelä, J. A., Chan, A. L., Rossello, F. J., Nefzger, C. M., Legrand, J. M. D., De Seram, M., Polo, J. M. and Hobbs, R. M. (2018). Identification of dynamic undifferentiated cell states within the male germline. *Nat. Commun.* **9**, 2819.
- Lauridsen, F. K. B., Jensen, T. L., Rapin, N., Aslan, D., Wilhelmson, A. S., Pundhir, S., Rehn, M., Paul, F., Giladi, A., Hasemann, M. S., et al. (2018). Differences in Cell Cycle Status Underlie Transcriptional Heterogeneity in the HSC Compartment. *Cell Rep.* **24**, 766–780.
- Lee, J. H., Lee, J. E., Kahng, J. Y., Kim, S. H., Park, J. S., Yoon, S. J., Um, J.-Y., Kim, W. K., Lee, J.-K., Park, J., et al. (2018). Human glioblastoma arises from subventricular zone cells with low-level driver mutations. *Nature*. doi: 10.1038/s41586-018-0414-6.
- Li, L., Tian, E., Chen, X., Chao, J., Klein, J., Qu, Q., Sun, G., Sun, G., Huang, Y., Warden, C. D., et al. (2018). GFAP Mutations in Astrocytes Impair Oligodendrocyte Progenitor Proliferation and Myelination in an hiPSC Model of Alexander Disease. *Cell Stem Cell* **23**, 239–251.e6.
- Li, M., Yu, J. S. L., Tilgner, K., Ong, S. H., Koike-Yusa, H. and Yusa, K. (2018). Genome-wide CRISPR-KO Screen Uncovers mTORC1-Mediated Gsk3 Regulation in Naive Pluripotency Maintenance and Dissolution. *Cell Rep.* **24**, 489–502.
- Li, P., Ding, N., Zhang, W. and Chen, L. (2018). COPS2 Antagonizes OCT4 to Accelerate the G2/M Transition of Mouse Embryonic Stem Cells. *Stem Cell Reports*. doi: 10.1016/j.stemcr.2018.06.013.
- Li, S., Li, M., Liu, X., Yang, Y., Wei, Y., Chen, Y., Qiu, Y., Zhou, T., Feng, Z., Ma, D., et al. (2018). Genetic and Chemical Screenings Identify HDAC3 as a Key Regulator in Hepatic Differentiation of Human Pluripotent Stem Cells. *Stem Cell Reports* **11**, 22–31.
- Li, X., Francies, H. E., Secrier, M., Perner, J., Miremedi, A., Galeano-Dalmau, N., Barendt, W. J., Letchford, L., Leyden, G. M., Goffin, E. K., et al. (2018). Organoid cultures recapitulate esophageal adenocarcinoma heterogeneity providing a model for clonality studies and precision therapeutics. *Nat. Commun.* **9**, 2983.
- Li, Y., Hermanson, D. L., Moriarity, B. S. and Kaufman, D. S. (2018). Human iPSC-Derived Natural Killer Cells Engineered with Chimeric Antigen Receptors Enhance Anti-tumor Activity. *Cell Stem Cell*. **23**, 181-192.



- Li, Z., Qian, P., Shao, W., Shi, H., He, X. C., Gogol, M., Yu, Z., Wang, Y., Qi, M., Zhu, Y., et al. (2018). Suppression of m6A reader Ythdf2 promotes hematopoietic stem cell expansion. *Cell Res.* doi: 10.1038/s41422-018-0072-0.
- Lieberman, O. J., McGuirt, A. F., Mosharov, E. V., Pigulevskiy, I., Hobson, B. D., Choi, S., Frier, M. D., Santini, E., Borgkvist, A. and Sulzer, D. (2018). Dopamine Triggers the Maturation of Striatal Spiny Projection Neuron Excitability during a Critical Period. *Neuron.* 99, 540-554.
- Lin, S., Liu, Q., Lelyveld, V. S., Choe, J., Szostak, J. W. and Gregory, R. I. (2018). Mettl1/Wdr4-Mediated m7G tRNA Methylation Is Required for Normal mRNA Translation and Embryonic Stem Cell Self-Renewal and Differentiation. *Mol. Cell.* 71, 244-255.
- Loh, P. R., Genovese, G., Handsaker, R. E., Finucane, H. K., Reshef, Y. A., Palamara, P. F., Birmann, B. M., Talkowski, M. E., Bakhoun, S. F., McCarroll, S. A., et al. (2018). Insights into clonal haematopoiesis from 8,342 mosaic chromosomal alterations. *Nature* 559, 350–355.
- Long, K. R., Newland, B., Florio, M., Kalebic, N., Langen, B., Kolterer, A., Wimberger, P. and Huttner, W. B. (2018). Extracellular Matrix Components HAPLN1, Lumican, and Collagen I Cause Hyaluronic Acid-Dependent Folding of the Developing Human Neocortex. *Neuron.* doi: 10.1016/j.neuron.2018.07.013.
- Madhavan, M., Nevin, Z. S., Shick, H. E., Garrison, E., Clarkson-Paredes, C., Karl, M., Clayton, B. L. L., Factor, D. C., Allan, K. C., Barbar, L., et al. (2018). Induction of myelinating oligodendrocytes in human cortical spheroids. *Nat. Methods.* doi: 10.1038/s41592-018-0081-4.
- Mai, T., Markov, G. J., Brady, J. J., Palla, A., Zeng, H., Sebastiano, V. and Blau, H. M. (2018). NKX3-1 is required for induced pluripotent stem cell reprogramming and can replace OCT4 in mouse and human iPSC induction. *Nat. Cell Biol.* 20, 1–9.
- Massaro, G., Mattar, C. N. Z., Wong, A. M. S., Sirka, E., Buckley, S. M. K., Herbert, B. R., Karlsson, S., Perocheau, D. P., Burke, D., Heales, S., et al. (2018). Fetal gene therapy for neurodegenerative disease of infants. *Nat. Med.* doi: 10.1038/s41591-018-0106-7.
- Mizuno, G. O., Wang, Y., Shi, G., Wang, Y., Sun, J., Papadopoulos, S., Broussard, G. J., Unger, E. K., Deng, W., Weick, J., et al. (2018). Aberrant Calcium Signaling in Astrocytes Inhibits Neuronal Excitability in a Human Down Syndrome Stem Cell Model. *Cell Rep.* 24, 355–365.
- Montoro, D. T., Haber, A. L., Biton, M., Vinarsky, V., Lin, B., Birket, S. E., Yuan, F., Chen, S., Leung, H. M., Villoria, J., et al. (2018). A revised airway epithelial hierarchy includes CFTR-expressing ionocytes. *Nature.* doi: 10.1038/s41586-018-0393-7.

- Morales-Hernández, A., Martinat, A., Chabot, A., Kang, G. and McKinney-Freeman, S. (2018). Elevated Oxidative Stress Impairs Hematopoietic Progenitor Function in C57BL/6 Substrains. *Stem Cell Reports*. doi: [10.1016/j.stemcr.2018.06.011](https://doi.org/10.1016/j.stemcr.2018.06.011).
- Morizur, L., Chicheportiche, A., Gauthier, L. R., Daynac, M., Boussin, F. D. and Mouthon, M. A. (2018). Distinct Molecular Signatures of Quiescent and Activated Adult Neural Stem Cells Reveal Specific Interactions with Their Microenvironment. *Stem Cell Reports*. doi: [10.1016/j.stemcr.2018.06.005](https://doi.org/10.1016/j.stemcr.2018.06.005).
- Mucci, A., Lopez-Rodriguez, E., Hetzel, M., Liu, S., Suzuki, T., Happle, C., Ackermann, M., Kempf, H., Hillje, R., Kunkiel, J., et al. (2018). iPSC-Derived Macrophages Effectively Treat Pulmonary Alveolar Proteinosis in Csf2rb -Deficient Mice. *Stem Cell Reports*. doi: [10.1016/j.stemcr.2018.07.006](https://doi.org/10.1016/j.stemcr.2018.07.006).
- Nakayama, H., Abe, M., Morimoto, C., Iida, T., Okabe, S., Sakimura, K. and Hashimoto, K. (2018). Microglia permit climbing fiber elimination by promoting GABAergic inhibition in the developing cerebellum. *Nat. Commun.* **9**, 2830.
- Ogura, T., Sakaguchi, H., Miyamoto, S. and Takahashi, J. (2018). Three-dimensional induction of dorsal, intermediate and ventral spinal cord tissues from human pluripotent stem cells. *Development* **145**, dev162214.
- Okawa, S., Saltó, C., Ravichandran, S., Yang, S., Toledo, E. M., Arenas, E. and Del Sol, A. (2018). Transcriptional synergy as an emergent property defining cell subpopulation identity enables population shift. *Nat. Commun.* **9**, 2595.
- Ooki, A., Dinalankara, W., Marchionni, L., Tsay, J. C. J., Goparaju, C., Maleki, Z., Rom, W. N., Pass, H. I. and Hoque, M. O. (2018). Epigenetically regulated PAX6 drives cancer cells toward a stem-like state via GLI-SOX2 signaling axis in lung adenocarcinoma. *Oncogene* **1–15**.
- Perekatt, A. O., Shah, P. P., Cheung, S., Jariwala, N., Wu, A., Gandhi, V., Kumar, N., Feng, Q., Patel, N., Chen, L., et al. (2018). SMAD4 suppresses WNT-driven de-differentiation and oncogenesis in the differentiated gut epithelium. *Cancer Res.* canres.0043.2018.
- Piragyte, I., Clapes, T., Polyzou, A., Klein Geltink, R. I., Lefkopoulos, S., Yin, N., Cauchy, P., Curtis, J. D., Klaeyle, L., Langa, X., et al. (2018). A metabolic interplay coordinated by HLX regulates myeloid differentiation and AML through partly overlapping pathways. *Nat. Commun.* **9**, 3090.
- Plasschaert, L. W., Žilionis, R., Choo-Wing, R., Savova, V., Knehr, J., Roma, G., Klein, A. M. and Jaffe, A. B. (2018). A single-cell atlas of the airway epithelium reveals the CFTR-rich pulmonary ionocyte. *Nature*. doi: [10.1038/s41586-018-0394-6](https://doi.org/10.1038/s41586-018-0394-6).
- Prots, I., Grosch, J., Brazdis, R.-M., Simmnacher, K., Veber, V., Havlicek, S., Hannappel, C., Krach, F., Krumbiegel, M., Schütz, O., et al. (2018).  $\alpha$ -Synuclein oligomers induce early



axonal dysfunction in human iPSC-based models of synucleinopathies. *Proc. Natl. Acad. Sci.* 115, 201713129.

Przanowski, P., Wasko, U., Zheng, Z., Yu, J., Sherman, R., Zhu, L. J., McConnell, M. J., Tushir-Singh, J., Green, M. R. and Bhatnagar, S. (2018). Pharmacological reactivation of inactive X-linked *Mecp2* in cerebral cortical neurons of living mice. *Proc. Natl. Acad. Sci.* 201803792.

Pulikkan, J. A., Hegde, M., Ahmad, H. M., Belaghzal, H., Illendula, A., Yu, J., O'Hagan, K., Ou, J., Muller-Tidow, C., Wolfe, S. A., et al. (2018). CBF $\beta$ -SMMHC Inhibition Triggers Apoptosis by Disrupting MYC Chromatin Dynamics in Acute Myeloid Leukemia. *Cell* 174, 172–186.e21.

Quek, L., David, M. D., Kennedy, A., Metzner, M., Amatangelo, M., Shih, A., Stoilova, B., Quivoron, C., Heiblig, M., Willekens, C., et al. (2018). Clonal heterogeneity of acute myeloid leukemia treated with the IDH2 inhibitor enasidenib. *Nat. Med.* 1–11.

Rambow, F., Rogiers, A., Marin-Bejar, O., Aibar, S., Femel, J., Dewaele, M., Karras, P., Brown, D., Chang, Y. H., Debiec-Rychter, M., et al. (2018). Toward Minimal Residual Disease-Directed Therapy in Melanoma. *Cell*. doi: 10.1016/j.cell.2018.06.025.

Reichmann, J., Nijmeijer, B., Hossain, M. J., Eguren, M., Schneider, I., Politi, A. Z., Roberti, M. J., Hufnagel, L., Hiiragi, T. and Ellenberg, J. (2018). Dual spindle formation in zygotes keeps parental genomes apart in early mammalian embryos. *Science* 361, 189–193.

Ricciardi, A. S., Bahal, R., Farrelly, J. S., Quijano, E., Bianchi, A. H., Luks, V. L., Putman, R., López-Giráldez, F., Coşkun, S., Song, E., et al. (2018). In utero nanoparticle delivery for site-specific genome editing. *Nat. Commun.* 9, 2481.

Richardson, C. D., Kazane, K. R., Feng, S. J., Zelin, E., Bray, N. L., Schäfer, A. J., Floor, S. N. and Corn, J. E. (2018). CRISPR–Cas9 genome editing in human cells occurs via the Fanconi anemia pathway. *Nat. Genet.* 50, 1132–1139.

Roth, T. L., Puig-Saus, C., Yu, R., Shifrut, E., Carnevale, J., Li, P. J., Hiatt, J., Saco, J., Krystofinski, P., Li, H., et al. (2018). Reprogramming human T cell function and specificity with non-viral genome targeting. *Nature* 559, 405–409.

Sabari, B. R., Dall'agnese, A., Boijja, A., Klein, I. A., Coffey, E. L., Shrinivas, K., Abraham, B. J., Hannett, N. M., Zamudio, A. V., Manteiga, J. C., et al. (2018). Coactivator condensation at super-enhancers links phase separation and gene control. *Science* DOI: 10.1126/science.aar3958.

Sachani, S. S., Landschoot, L. S., Zhang, L., White, C. R., MacDonald, W. A., Golding, M. C. and Mann, M. R. W. (2018). Nucleoporin 107, 62 and 153 mediate Kcnq1ot1 imprinted domain regulation in extraembryonic endoderm stem cells. *Nat. Commun.* 9, 2795.

- Salas, L. A., Wiencke, J. K., Koestler, D. C., Zhang, Z., Christensen, B. C. and Kelsey, K. T. (2018). Tracing human stem cell lineage during development using DNA methylation. *Genome Res.* gr.233213.117.
- Scaglione, A., Patzig, J., Liang, J., Frawley, R., Bok, J., Mela, A., Yattah, C., Zhang, J., Teo, S. X., Zhou, T., et al. (2018). PRMT5-mediated regulation of developmental myelination. *Nat. Commun.* **9**, 2840.
- Schaffer, A. E., Breuss, M. W., Caglayan, A. O., Al-Sanaa, N., Al-Abdulwahed, H. Y., Kaymakçalan, H., Yılmaz, C., Zaki, M. S., Rosti, R. O., Copeland, B., et al. (2018). Biallelic loss of human CTNNA2, encoding  $\alpha$ N-catenin, leads to ARP2/3 complex overactivity and disordered cortical neuronal migration. *Nat. Genet.* **50**, 1–9.
- Schwarz, B. A., Cetinbas, M., Clement, K., Walsh, R. M., Cheloufi, S., Gu, H., Langkabel, J., Kamiya, A., Schorle, H., Meissner, A., et al. (2018). Prospective Isolation of Poised iPSC Intermediates Reveals Principles of Cellular Reprogramming. *Cell Stem Cell* **23**, 289–305.e5.
- Senís, E., Mosteiro, L., Wilkening, S., Wiedtke, E., Nowrouzi, A., Afzal, S., Fronza, R., Landerer, H., Abad, M., Niopek, D., et al. (2018). AAVvector-mediated in vivo reprogramming into pluripotency. *Nat. Commun.* **9**, 2651.
- Shepherd, M. S., Li, J., Wilson, N. K., Oedekoven, C. A., Li, J., Belmonte, M., Fink, J., Prick, J. C. M., Pask, D. C., Hamilton, T. L., et al. (2018). Single cell approaches identify the molecular network driving malignant hematopoietic stem cell self-renewal. *Blood* blood-2017-12-821066.
- Shi, L., Tang, X., Qian, M., Liu, Z., Meng, F., Fu, L., Wang, Z., Zhu, W. G., Huang, J. D., Zhou, Z., et al. (2018). A SIRT1-centered circuitry regulates breast cancer stemness and metastasis. *Oncogene*. doi: 10.1038/s41388-018-0370-5.
- Simão, D., Silva, M. M., Terrasso, A. P., Arez, F., Sousa, M. F. Q., Mehrjardi, N. Z., Šarić, T., Gomes-Alves, P., Raimundo, N., Alves, P. M., et al. (2018). Recapitulation of Human Neural Microenvironment Signatures in iPSC-Derived NPC 3D Differentiation. *Stem Cell Reports.* **11**, 1-13.
- Sommer, A., Maxreiter, F., Krach, F., Fadler, T., Grosch, J., Maroni, M., Graef, D., Eberhardt, E., Riemenschneider, M. J., Yeo, G. W., et al. (2018). Th17 Lymphocytes Induce Neuronal Cell Death in a Human iPSC-Based Model of Parkinson's Disease. *Cell Stem Cell* **23**, 123–131.e6.
- Sozen, B., Amadei, G., Cox, A., Wang, R., Na, E., Czukiewska, S., Chappell, L., Voet, T., Michel, G., Jing, N., et al. (2018). Self-assembly of embryonic and two extra-embryonic stem cell types into gastrulating embryo-like structures. *Nat. Cell Biol.* doi: 10.1038/s41556-018-0147-7.

- Strasser, M. K., Hoppe, P. S., Loeffler, D., Kokkaliaris, K. D., Schroeder, T., Theis, F. J. and Marr, C. (2018). Lineage marker synchrony in hematopoietic genealogies refutes the PU.1/GATA1 toggle switch paradigm. *Nat. Commun.* **9**, 2697.
- Strohkendl, I., Saifuddin, F. A., Rybarski, J. R., Finkelstein, I. J. and Russell, R. (2018). Kinetic basis for DNA target specificity of CRISPR-Cas12a. *Mol Cell.* 1–31. doi: 10.1016/j.molcel.2018.06.043.
- Su, T., Stanley, G., Sinha, R., D'Amato, G., Das, S., Rhee, S., Chang, A. H., Poduri, A., Raftrey, B., Dinh, T. T., et al. (2018). Single-cell analysis of early progenitor cells that build coronary arteries. *Nature* **559**, 356–362.
- Tang, Y., Xiong, S., Yu, P., Liu, F. and Cheng, L. (2018). Direct Conversion of Mouse Fibroblasts into Neural Stem Cells by Chemical Cocktail Requires Stepwise Activation of Growth Factors and Nup210. *Cell Rep.* **24**, 1355–1362.e3.
- Tank, E. M., Figueroa-Romero, C., Hinder, L. M., Bedi, K., Archbold, H. C., Li, X., Weskamp, K., Safren, N., Paez-Colasante, X., Pacut, C., et al. (2018). Abnormal RNA stability in amyotrophic lateral sclerosis. *Nat. Commun.* **9**, 2845.
- Toda, S., Blauch, L. R., Tang, S. K. Y., Morsut, L. and Lim, W. A. (2018). Programming self-organizing multicellular structures with synthetic cell-cell signaling. *Science* **361**, 156–162.
- Umemoto, T., Hashimoto, M., Matsumura, T., Nakamura-Ishizu, A. and Suda, T. (2018). Ca<sup>2+</sup>-mitochondria axis drives cell division in hematopoietic stem cells. *J. Exp. Med.* **215**, 1–17.
- Vakulskas, C. A., Dever, D. P., Rettig, G. R., Turk, R., Jacobi, A. M., Collingwood, M. A., Bode, N. M., McNeill, M. S., Yan, S., Camarena, J., et al. (2018). A high-fidelity Cas9 mutant delivered as a ribonucleoprotein complex enables efficient gene editing in human hematopoietic stem and progenitor cells. *Nat. Med.* **24**, 1216–1224.
- Veerapandian, V., Ackermann, J. O., Srivastava, Y., Malik, V., Weng, M., Yang, X. and Jauch, R. (2018). Directed Evolution of Reprogramming Factors by Cell Selection and Sequencing. *Stem Cell Reports.* doi: 10.1016/j.stemcr.2018.07.002.
- Vitali, I., Fièvre, S., Telley, L., Oberst, P., Bariselli, S., Frangeul, L., Baumann, N., McMahon, J. J., Klingler, E., Bocchi, R., et al. (2018). Progenitor Hyperpolarization Regulates the Sequential Generation of Neuronal Subtypes in the Developing Neocortex. *Cell.* doi: 10.1016/j.cell.2018.06.036.
- Wang, B., Lee, J., Li, P., Saberi, A., Yang, H., Liu, C., Zhao, M. and Newmark, P. A. (2018). Stem cell heterogeneity drives the parasitic life cycle of *Schistosoma mansoni*. *Elife* **7**, 1–23.

- Wang, L., Dou, K., Moon, S., Tan, F. J. and Zhang, Z. Z. (2018). Hijacking Oogenesis Enables Massive Propagation of LINE and Retroviral Transposons. *Cell*. doi: 10.1016/j.cell.2018.06.040.
- Weltner, J., Balboa, D., Katayama, S., Bernal, M., Krjutškov, K., Jouhilahti, E. M., Trokovic, R., Kere, J. and Otonkoski, T. (2018). Human pluripotent reprogramming with CRISPR activators. *Nat. Commun.* 9, 2643.
- Wünsche, P., Eckert, E. S. P., Holland-Letz, T., Paruzynski, A., Hotz-Wagenblatt, A., Fronza, R., Rath, T., Gil-Farina, I., Schmidt, M., von Kalle, C., et al. (2018). Mapping Active Gene-Regulatory Regions in Human Repopulating Long-Term HSCs. *Cell Stem Cell* 23, 132–146.e9.
- Xiao, D., Liu, X., Zhang, M., Zou, M., Deng, Q., Sun, D., Bian, X., Cai, Y., Guo, Y., Liu, S., et al. (2018). Direct reprogramming of fibroblasts into neural stem cells by single non-neural progenitor transcription factor Ptf1a. *Nat. Commun.* 9, 2865.
- Yang, L., Chueng, S.-T. D., Li, Y., Patel, M., Rathnam, C., Dey, G., Wang, L., Cai, L. and Lee, K.-B. (2018). A biodegradable hybrid inorganic nanoscaffold for advanced stem cell therapy. *Nat. Commun.* 9, 3147.
- Yang, X., Zhou, J., He, J., Liu, J., Wang, H., Liu, Y., Jiang, T., Zhang, Q., Fu, X. and Xu, Y. (2018). An Immune System-Modified Rat Model for Human Stem Cell Transplantation Research. *Stem Cell Reports*. doi: 10.1016/j.stemcr.2018.06.004.
- Yeh, C.-Y., Asrican, B., Moss, J., Quintanilla, L. J., He, T., Mao, X., Cassé, F., Gebara, E., Bao, H., Lu, W., et al. (2018). Mossy Cells Control Adult Neural Stem Cell Quiescence and Maintenance through a Dynamic Balance between Direct and Indirect Pathways. *Neuron*. 99, 493-510.
- Zhang, Z., Marro, S. G., Zhang, Y., Arendt, K. L., Patzke, C., Zhou, B., Fair, T., Yang, N., Südhof, T. C., Wernig, M., et al. (2018). The fragile X mutation impairs homeostatic plasticity in human neurons by blocking synaptic retinoic acid signaling. *Sci. Transl. Med* 10, 4338.