



Sergiu P. Pasca

Kenneth T. Norris, Jr. Professor of Psychiatry and Behavioral Sciences and Bonnie Uytengsu and Family Director of the Stanford Brain Organogenesis Program

Psychiatry and Behavioral Sciences - Sleep Medicine

CONTACT INFORMATION

- **Administrative Contact**

Jhaleh Oliaei - Administrative Assistant

Email jhaleh@stanford.edu

Bio

ACADEMIC APPOINTMENTS

- Professor, Psychiatry and Behavioral Sciences - Sleep Medicine
- Member, Bio-X
- Member, Wu Tsai Human Performance Alliance
- Member, Maternal & Child Health Research Institute (MCHRI)
- Faculty Fellow, Sarafan ChEM-H
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Uytengsu Family Director of the Stanford Brain Organogenesis Program, Wu Tsai Neurosciences Institute, (2019- present)
- Associate Division Chief for Advancing Science, Stanford University School of Medicine, (2020- present)
- Director, Physician-Scientist Advanced Mentorship Program, (2018- present)
- Director, Stanford Neuroscience Stem Cell Core, Wu Tsai Neuroscience Institute, (2015- present)

HONORS AND AWARDS

- Eva King Killam Research Award, American College of Neuropsychopharmacology (ACNP) (2024)
- Schaller Award in Translational Neuroscience, FENS (2024)
- ISSCR Momentum Award, International Society for Stem Cell Research (2024)
- Doctor Honoris Causa (D.H.C.), Hatieganu Medical School (2023)
- Sumitomo/Sunovion Prize, International College of Neuropsychopharmacology (2023)
- Knight of the Order of Merit, The Chancery of Orders (2023)
- Blavatnik Award Finalist, Blavatnik Foundation (2023)
- Innovation & Science Award, Radio Romania (2023)
- CZ Biohub Investigator, BioHub (2022-2027)
- Blavatnik Award Finalist, Blavatnik Foundation (2022)

- IBRO-Kemali International Prize in Neuroscience, International Brain Research Organization (2022)
- Inverse Breakthrough Award 2022, Inverse (2022)
- TED Speaker, TED Vancouver (2022)
- Top 10 Scientific Breakthroughs of 2022, NewsWeek (2022)
- Quanta Top 6 Discoveries in Biology, Quanta (2022)
- Advancing Science Award, Stanford Medicine, Psychiatry (2021)
- Highly Cited Researcher, Clarivate (2021)
- Joseph Altman Award in Developmental Neuroscience, Japanese Neuroscience Society (2021)
- Judson Daland Prize, American Society of Philosophy (2021)
- Schizophrenia Basic Research Award, Schizophrenia International Research Society (2021)
- Theodore Reich Award, International Society for Psychiatric Genetics (2021)
- C.J. Herrick Award in Neuroanatomy, American Association of Anatomy (AAA) (2020)
- Falling Walls Breakthrough in Life Sciences Prize, Berlin, Germany (2020)
- Ben Barres Investigator, Chan-Zuckerberg Initiative (CZI) (2019)
- Nature Medicine's Featured Physician-Scientists, Nature Medicine (2019)
- Scientist to Watch, The Scientist (2019)
- A.E. Bennett Award, Society of Biological Psychiatry (2018)
- Daniel H. Efron Award, American College of Neuropsychopharmacology (ACNP) (2018)
- Günter Blobel Award, American Society of Cell Biology (2018)
- New York Times Visionaries in Science and Medicine, New York (2018)
- Vilcek Award for Creative Biomedical Promise, Vilcek Foundation (2018)
- Jordi Folch-Pi Award for Neurochemistry, American Society for Neurochemistry (2017)
- NARSAD Independent Investigator Award, Brain & Behavior Research Foundation (2017)
- NIH Top Research Highlights of 2017, National Institute of Health (NIH) (2017)
- NYSCF Robertson Stem Cell Investigator, New York Stem Cell Foundation (2017)
- Top Breakthroughs of 2017, Brain and Behavior Research Foundation (BBRF/NARSAD) (2017)
- Baxter Faculty Scholar Award, Baxter Foundation (2015)
- NIMH Director's BRAINS Award, National Institute of Mental Health (2015)
- MQ Fellow Award for Transforming Mental Health, MQ Foundation, London (2014)
- Alumni Excellence Research Award, Medicalis (2013)
- Grand Prize Best Romanian Student Abroad, LRSA (2013)
- NARSAD Young Investigator Award, Brain & Behavior Research Foundation (2013)
- Best Postdoctoral Research Award, Stanford University (2012)
- Sammy Kuo Award, Best Postdoctoral publication in Neuroscience at Stanford University (2012)
- Tashia & John Morgridge Endowed Fellow, Child Health Research Institute (CHRI) (2010-2012)
- IBRO Outstanding Research Fellow, International Research Organization (IBRO) (2009)
- Medical Student of the Year, VIP Foundation (2006)

PROFESSIONAL EDUCATION

- Postdoctoral, Stanford University School of Medicine , Neuroscience (2013)

- Medical Doctor, Hatieganu School of Medicine, Romania , Medicine (2007)

COMMUNITY AND INTERNATIONAL WORK

- Stanford Brain Organogenesis Hands-On Course
- Co-Organizer of the FENS/SfN Summer School on Neural Stem Cells and Organoids
- Co-Organizer of the Inaugural Cold Spring Harbor Meeting on Human Brain Development and 3D Modeling
- Co-Director of the Cold Spring Harbor Course in Autism Spectrum Disorders
- Working group: Translating Mechanisms to Treatments in Autism Spectrum Disorders

PATENTS

- Sergiu Pasca, Jimena Andersen, Fikri Birey. "United States Patent 10,676,715 Assembly of functionally integrated human forebrain spheroids and methods of use thereof", Stanford University, Jun 9, 2020
- Sergiu Pasca, Steven Sloan, Ben Barres, Anca Pasca. "United States Patent 10,494,602 Functional astrocytes and cortical neurons from induced pluripotent stem cells and methods of use thereof", Stanford University, Dec 3, 2019

LINKS

- Pasca Lab website: <http://www.pascalab.org/>
- Vilcek Award: <https://youtu.be/fbkxvjUKork>
- Minds Wide Open documentary: <https://youtu.be/MumBwrO3PAQ>
- Falling Walls Breakthrough in Life Sciences: <https://youtu.be/elU52JKvAKw>
- TED 2022: https://www.ted.com/talks/sergiu_p_pasca_how_we_re_reverse_engineering_the_human_brain_in_the_lab?language=en
- Stanford Brain Organogenesis: <http://www.brainorganogenesis.org/>
- Assembloids: <https://youtu.be/89mlSgw4Db4>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

A critical challenge in understanding the intricate programs underlying development, assembly and dysfunction of the human brain is the lack of direct access to intact, functioning human brain tissue for detailed investigation by imaging, recording, and stimulation.

To address this, we are developing bottom-up approaches to generate and assemble, from multi-cellular components, human neural circuits in vitro and in vivo.

We introduced the use of instructive signals for deriving from human pluripotent stem cells self-organizing 3D cellular structures named brain region-specific spheroids/organoids. We demonstrated that these cultures, such as the ones resembling the cerebral cortex, can be reliably derived across many lines and experiments, contain synaptically connected neurons and non-reactive astrocytes, and can be used to gain mechanistic insights into genetic and environmental brain disorders. Moreover, when maintained as long-term cultures, they recapitulate an intrinsic program of maturation that progresses towards postnatal stages.

We also pioneered a modular system to integrate 3D brain region-specific organoids and study human neuronal migration and neural circuit formation in functional preparations that we named assembloids. We have actively applied these models in combination with studies in long-term ex vivo brain preparations to acquire a deeper understanding of human physiology, evolution and disease mechanisms.

We have carved a unique research program that combines rigorous in vivo and in vitro neuroscience, stem cell and molecular biology approaches to construct and deconstruct previously inaccessible stages of human brain development and function in health and disease.

We believe science is a community effort, and accordingly, we have been advancing the field by broadly and openly sharing our technologies with numerous laboratories around the world and organizing the primary research conference and the training courses in the area of cellular models of the human brain.

Teaching

COURSES

2024-25

- Neurosciences Development Core: NEPR 202 (Win)

2023-24

- Neurosciences Development Core: NEPR 202 (Win)

2022-23

- Neurosciences Development Core: NEPR 202 (Win)

2021-22

- Neurosciences Development Core: NEPR 202 (Win)

STANFORD ADVISEES

Med Scholar Project Advisor

Paul Harary

Doctoral Dissertation Reader (AC)

Michelle Drews, Theo Ruffins

Postdoctoral Faculty Sponsor

Merve Avar, Emelie Braun, Chunyang Dong, Jin Hao, Kent Imaizumi, Konstantin Kaganovsky, Sabina Kanton, Ji-il Kim, Xiangling Meng, Xiao Yang

Doctoral Dissertation Advisor (AC)

Massimo Onesto

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Bioengineering (Phd Program)
- Biology (School of Humanities and Sciences) (Phd Program)
- Chemical and Systems Biology (Phd Program)
- Developmental Biology (Phd Program)
- Genetics (Phd Program)
- Molecular and Cellular Physiology (Phd Program)
- Neurosciences (Phd Program)
- Stem Cell Biology and Regenerative Medicine (Phd Program)

Publications

PUBLICATIONS

- **A framework for neural organoids, assembloids and transplantation studies.** *Nature*
Paşca, S. P., Arlotta, P., Bateup, H. S., Camp, J. G., Cappello, S., Gage, F. H., Knoblich, J. A., Kriegstein, A. R., Lancaster, M. A., Ming, G. L., Novarino, G., Okano, H., Parmar, et al
2024
- **Antisense oligonucleotide therapeutic approach for Timothy syndrome.** *Nature*
Chen, X., Birey, F., Li, M. Y., Revah, O., Levy, R., Thete, M. V., Reis, N., Kaganovsky, K., Onesto, M., Sakai, N., Hudacova, Z., Hao, J., Meng, et al
2024; 628 (8009): 818-825

- **Kirigami electronics for long-term electrophysiological recording of human neural organoids and assembloids.** *Nature biotechnology*
Yang, X., Forro, C., Li, T. L., Miura, Y., Zaluska, T. J., Tsai, C., Kanton, S., McQueen, J. P., Chen, X., Mollo, V., Santoro, F., Paşca, S. P., Cui, et al
2024
- **Constructing human neural circuits in living systems by transplantation.** *Cell*
Paşca, S. P.
2024; 187 (1): 8-13
- **Assembloid CRISPR screens reveal impact of disease genes in human neurodevelopment.** *Nature*
Meng, X., Yao, D., Imaizumi, K., Chen, X., Kelley, K. W., Reis, N., Thete, M. V., Arjun McKinney, A., Kulkarni, S., Panagiotakos, G., Bassik, M. C., Paşca, S. P.
2023
- **Maturation and circuit integration of transplanted human cortical organoids.** *Nature*
Revah, O., Gore, F., Kelley, K. W., Andersen, J., Sakai, N., Chen, X., Li, M. Y., Birey, F., Yang, X., Saw, N. L., Baker, S. W., Amin, N. D., Kulkarni, et al
2022; 610 (7931): 319-326
- **A nomenclature consensus for nervous system organoids and assembloids.** *Nature*
Paşca, S. P., Arlotta, P., Bateup, H. S., Camp, J. G., Cappello, S., Gage, F. H., Knoblich, J. A., Kriegstein, A. R., Lancaster, M. A., Ming, G. L., Muotri, A. R., Park, I. H., Reiner, et al
2022; 609 (7929): 907-910
- **Human brain organogenesis: Toward a cellular understanding of development and disease.** *Cell*
Kelley, K. W., Paşca, S. P.
2021
- **Chromatin accessibility dynamics in a model of human forebrain development.** *Science (New York, N.Y.)*
Trevino, A. E., Sinnott-Armstrong, N. n., Andersen, J. n., Yoon, S. J., Huber, N. n., Pritchard, J. K., Chang, H. Y., Greenleaf, W. J., Paşca, S. P.
2020; 367 (6476)
- **Generation of Functional Human 3D Cortico-Motor Assembloids.** *Cell*
Andersen, J. n., Revah, O. n., Miura, Y. n., Thom, N. n., Amin, N. D., Kelley, K. W., Singh, M. n., Chen, X. n., Thete, M. V., Walczak, E. M., Vogel, H. n., Fan, H. C., Paşca, et al
2020
- **Generation of human striatal organoids and cortico-striatal assembloids from human pluripotent stem cells.** *Nature biotechnology*
Miura, Y. n., Li, M. Y., Birey, F. n., Ikeda, K. n., Revah, O. n., Thete, M. V., Park, J. Y., Puno, A. n., Lee, S. H., Porteus, M. H., Paşca, S. P.
2020; 38 (12): 1421-30
- **Neuronal defects in a human cellular model of 22q11.2 deletion syndrome.** *Nature medicine*
Khan, T. A., Revah, O. n., Gordon, A. n., Yoon, S. J., Krawisz, A. K., Goid, C. n., Sun, Y. n., Kim, C. H., Tian, Y. n., Li, M. Y., Schaepe, J. M., Ikeda, K. n., Amin, et al
2020
- **Assembling human brain organoids.** *Science (New York, N.Y.)*
Pasca, S. P.
2019; 363 (6423): 126-27
- **Reliability of human cortical organoid generation.** *Nature methods*
Yoon, S. J., Elahi, L. S., Paşca, A. M., Marton, R. M., Gordon, A. n., Revah, O. n., Miura, Y. n., Walczak, E. M., Holdgate, G. M., Fan, H. C., Huguenard, J. R., Geschwind, D. H., Paşca, et al
2019; 16 (1): 75-78
- **Human 3D cellular model of hypoxic brain injury of prematurity.** *Nature medicine*
Paşca, A. M., Park, J. Y., Shin, H. W., Qi, Q. n., Revah, O. n., Krasnoff, R. n., O'Hara, R. n., Willsey, A. J., Palmer, T. D., Paşca, S. P.
2019
- **Generation and assembly of human brain region-specific three-dimensional cultures.** *Nature protocols*
Sloan, S. A., Andersen, J., Paşca, A. M., Birey, F., Paşca, S. P.
2018

- **The rise of three-dimensional human brain cultures.** *Nature*
Paşca, S. P.
2018; 553 (7689): 437-445
- **Building Models of Brain Disorders with Three-Dimensional Organoids.** *Neuron*
Amin, N. D., Paşca, S. P.
2018; 100 (2): 389-405
- **Assembly of functionally integrated human forebrain spheroids** *NATURE*
Birey, F., Andersen, J., Makinson, C. D., Islam, S., Wei, W., Huber, N., Fan, H. C., Metzler, K. R., Panagiotakos, G., Thom, N., O'Rourke, N. A., Steinmetz, L. M., Bernstein, et al
2017; 545 (7652): 54-?
- **Human Astrocyte Maturation Captured in 3D Cerebral Cortical Spheroids Derived from Pluripotent Stem Cells.** *Neuron*
Sloan, S. A., Darmanis, S. n., Huber, N. n., Khan, T. A., Birey, F. n., Caneda, C. n., Reimer, R. n., Quake, S. R., Barres, B. A., Paşca, S. P.
2017; 95 (4): 779-90.e6
- **Functional cortical neurons and astrocytes from human pluripotent stem cells in 3D culture.** *Nature methods*
Pasca, A. M., Sloan, S. A., Clarke, L. E., Tian, Y., Makinson, C. D., Huber, N., Kim, C. H., Park, J., O'Rourke, N. A., Nguyen, K. D., Smith, S. J., Huguenard, J. R., Geschwind, et al
2015; 12 (7): 671-678
- **Generating human neural diversity with a multiplexed morphogen screen in organoids.** *Cell stem cell*
Amin, N. D., Kelley, K. W., Kaganovsky, K., Onesto, M., Hao, J., Miura, Y., McQueen, J. P., Reis, N., Narazaki, G., Li, T., Kulkarni, S., Pavlov, S., Paşca, et al
2024; 31 (12): 1831-1846.e9
- **An integrated transcriptomic cell atlas of human neural organoids.** *Nature*
He, Z., Dony, L., Fleck, J. S., Szalata, A., Li, K. X., Slišković, I., Lin, H. C., Santel, M., Atamian, A., Quadrato, G., Sun, J., Paşca, S. P., Camp, et al
2024; 635 (8039): 690-698
- **Assembloid models of cell-cell interaction to study tissue and disease biology.** *Cell stem cell*
Onesto, M. M., Kim, J. I., Pasca, S. P.
2024
- **Human assembloids reveal the consequences of CACNA1G gene variants in the thalamocortical pathway.** *Neuron*
Kim, J. I., Miura, Y., Li, M. Y., Revah, O., Selvaraj, S., Birey, F., Meng, X., Thete, M. V., Pavlov, S. D., Andersen, J., Paşca, A. M., Porteus, M. H., Huguenard, et al
2024
- **Host circuit engagement of human cortical organoids transplanted in rodents.** *Nature protocols*
Kelley, K. W., Revah, O., Gore, F., Kaganovsky, K., Chen, X., Deisseroth, K., Paşca, S. P.
2024
- **Roadmap for developing biologically inspired therapeutics for genetic brain disorders.** *Trends in molecular medicine*
Imaizumi, K., Paşca, S. P.
2023
- **Spatially controlled construction of assembloids using bioprinting.** *Nature communications*
Roth, J. G., Brunel, L. G., Huang, M. S., Liu, Y., Cai, B., Sinha, S., Yang, F., Paşca, S. P., Shin, S., Heilshorn, S. C.
2023; 14 (1): 4346
- **Magnetized 3D Bioprinting To Construct Multi-Organoid Assembloids**
Cai, B., Roth, J. G., Brunel, L. G., Huang, M. S., Liu, Y., Pasca, S., Shin, S., Heilshorn, S.
MARY ANN LIEBERT, INC.2023
- **A Cross-Sectional Study of the Neuropsychiatric Phenotype of CACNA1C-Related Disorder**
Levy, R., Timothy, K., Underwood, J., Hall, J., Bernstein, J., Pasca, S.
LIPPINCOTT WILLIAMS & WILKINS.2023

- **Single-cell transcriptomic landscape of the developing human spinal cord.** *Nature neuroscience*
Andersen, J., Thom, N., Shadrach, J. L., Chen, X., Onesto, M. M., Amin, N. D., Yoon, S. J., Li, L., Greenleaf, W. J., Müller, F., Paşca, A. M., Kaltschmidt, J. A., Paşca, et al
2023
- **Selection of rAAV vectors that cross the human blood-brain barrier and target the central nervous system using a transwell model** *MOLECULAR THERAPY-METHODS & CLINICAL DEVELOPMENT*
Song, R., Pekrun, K., Khan, T. A., Zhang, F., Pasca, S. P., Kay, M. A.
2022; 27: 73-88
- **What Have Organoids and Assembloids Taught Us About the Pathophysiology of Neuropsychiatric Disorders?** *Biological psychiatry*
Levy, R. J., Paşca, S. P.
2022
- **A Cross-Sectional Study of the Neuropsychiatric Phenotype of CACNA1C-Related Disorder.** *Pediatric neurology*
Levy, R. J., Timothy, K. W., Underwood, J. F., Hall, J., Bernstein, J. A., Paşca, S. P.
2022; 138: 101-106
- **Stretchable mesh microelectronics for the biointegration and stimulation of human neural organoids.** *Biomaterials*
Li, T. L., Liu, Y., Forro, C., Yang, X., Beker, L., Bao, Z., Cui, B., Paşca, S. P.
2022; 290: 121825
- **How collaboration between bioethicists and neuroscientists can advance research.** *Nature neuroscience*
Hyun, I., Scharf-Deering, J. C., Sullivan, S., Aach, J. D., Arlotta, P., Baum, M. L., Church, G. M., Goldenberg, A., Greely, H. T., Khoshakhlagh, P., Kohman, R. E., Lopes, M., Lowenthal, et al
2022
- **Human assembloids.** *Development (Cambridge, England)*
Kanton, S., Pasca, S. P.
2022; 149 (20)
- **Mouse embryo models built from stem cells take shape in a dish.** *Nature*
Amin, N. D., Paşca, S. P.
2022; 610 (7930): 39-40
- **Modulating miR-218 in Human Motor Neurons Using Assembloids**
Amin, N., Kulkarni, S., Pasca, S.
WILEY.2022: S168
- **Imaging neuronal migration and network activity in human forebrain assembloids.** *STAR protocols*
Birey, F., Paşca, S. P.
2022; 3 (3): 101478
- **A tissue-like neurotransmitter sensor for the brain and gut.** *Nature*
Li, J., Liu, Y., Yuan, L., Zhang, B., Bishop, E. S., Wang, K., Tang, J., Zheng, Y., Xu, W., Niu, S., Beker, L., Li, T. L., Chen, et al
2022; 606 (7912): 94-101
- **Mesh electrode arrays for integration with electrogenic organoids**
Forro, C., Li, T., Yang, X., Tsai, C., Cui, B., Pasca, S.
CELL PRESS.2022: 16
- **Engineering brain assembloids to interrogate human neural circuits.** *Nature protocols*
Miura, Y., Li, M. Y., Revah, O., Yoon, S. J., Narazaki, G., Paşca, S. P.
2022
- **A CROSS-SECTIONAL STUDY OF THE NEUROPSYCHIATRIC PHENOTYPE OF CACNA1C-RELATED DISORDER**
Levy, R. J., Timothy, K., Bernstein, J., Pasca, S.
BMJ PUBLISHING GROUP.2022: 287-288
- **Nanotechnology Enables Novel Modalities for Neuromodulation.** *Advanced materials (Deerfield Beach, Fla.)*

- Yang, X., McGlynn, E., Das, R., Pasca, S. P., Cui, B., Heidari, H.
2021: e2103208
- **Chromatin dynamics in human brain development and disease.** *Trends in cell biology*
Valencia, A. M., Paşca, S. P.
2021
 - **Advancing models of neural development with biomaterials.** *Nature reviews. Neuroscience*
Roth, J. G., Huang, M. S., Li, T. L., Feig, V. R., Jiang, Y., Cui, B., Greely, H. T., Bao, Z., Pasca, S. P., Heilshorn, S. C.
2021
 - **Scrutinizing disease states and regulation in human microglia.** *Nature genetics*
Kelley, K. W., Paşca, S. P.
2021
 - **Breaking Thru the Human Blood Brain Barrier: Discovering AAV Vectors Targeting the Central Nervous System Using a Transwell Model**
Song, R., Pekrun, K., Khan, T. A., Zhang, F., Pasca, S., Kay, M. A.
CELL PRESS.2021: 26-27
 - **Long-term maturation of human cortical organoids matches key early postnatal transitions.** *Nature neuroscience*
Gordon, A. n., Yoon, S. J., Tran, S. S., Makinson, C. D., Park, J. Y., Andersen, J. n., Valencia, A. M., Horvath, S. n., Xiao, X. n., Huguenard, J. R., Paşca, S. P., Geschwind, D. H.
2021
 - **Dissecting the molecular basis of human interneuron migration in forebrain assembloids from Timothy syndrome.** *Cell stem cell*
Birey, F., Li, M. Y., Gordon, A., Thete, M. V., Valencia, A. M., Revah, O., Paşca, A. M., Geschwind, D. H., Paşca, S. P.
2021
 - **The CD22-IGF2R interaction is a therapeutic target for microglial lysosome dysfunction in Niemann-Pick type C.** *Science translational medicine*
Pluvinae, J. V., Sun, J., Claes, C., Flynn, R. A., Haney, M. S., Iram, T., Meng, X., Lindemann, R., Riley, N. M., Danhash, E., Chadarevian, J. P., Tapp, E., Gate, et al
2021; 13 (622): eabg2919
 - **A matter of space and time: Emerging roles of disease-associated proteins in neural development.** *Neuron*
Panagiotakos, G., Pasca, S. P.
2021
 - **Chromatin and gene-regulatory dynamics of the developing human cerebral cortex at single-cell resolution.** *Cell*
Trevino, A. E., Müller, F., Andersen, J., Sundaram, L., Kathiria, A., Shcherbina, A., Farh, K., Chang, H. Y., Paşca, A. M., Kundaje, A., Paşca, S. P., Greenleaf, W. J.
2021
 - **Mapping human brain organoids on a spatial atlas.** *Cell stem cell*
Miura, Y., Paşca, S. P.
2021; 28 (6): 983-984
 - **Primate cell fusion disentangles gene regulatory divergence in neurodevelopment.** *Nature*
Agoglia, R. M., Sun, D. n., Birey, F. n., Yoon, S. J., Miura, Y. n., Sabatini, K. n., Paşca, S. P., Fraser, H. B.
2021
 - **Research and training in autism spectrum disorder to catalyze the next genomic and neuroscience revolutions.** *Molecular psychiatry*
Pasca, S. P., Veenstra-VanderWeele, J., McPartland, J. C.
2020
 - **Selection of Adeno-Associated Virus Vectors Targeting the Central Nervous System Usingan In Vitro Model of Human Blood-Brain Barrier**
Song, R., Pekrun, K., Khan, T. A., Zhang, F., Pasca, S., Kay, M. A.
CELL PRESS.2020: 75
 - **Genetically targeted chemical assembly of functional materials in living cells, tissues, and animals.** *Science (New York, N.Y.)*

- Liu, J. n., Kim, Y. S., Richardson, C. E., Tom, A. n., Ramakrishnan, C. n., Birey, F. n., Katsumata, T. n., Chen, S. n., Wang, C. n., Wang, X. n., Joubert, L. M., Jiang, Y. n., Wang, et al
2020; 367 (6484): 1372–76
- **Aberrant calcium channel splicing drives defects in cortical differentiation in Timothy Syndrome.** *eLife*
Panagiotakos, G., Haveles, C., Arjun, A., Petrova, R., Rana, A., Portmann, T., Pasca, S. P., Palmer, T. D., Dolmetsch, R. E.
2019; 8
 - **Engineering a Genetically Encoded Magnetic Protein Crystal.** *Nano letters*
Li, T. L., Wang, Z., You, H., Ong, Q., Varanasi, V. J., Dong, M., Lu, B., Pasca, S. P., Cui, B.
2019
 - **Engineered materials for organoid systems.** *Nature reviews. Materials*
Kratochvil, M. J., Seymour, A. J., Li, T. L., Paşca, S. P., Kuo, C. J., Heilshorn, S. C.
2019; 4 (9): 606-622
 - **Differentiation and maturation of oligodendrocytes in human three-dimensional neural cultures.** *Nature neuroscience*
Marton, R. M., Miura, Y. n., Sloan, S. A., Li, Q. n., Revah, O. n., Levy, R. J., Huguenard, J. R., Paşca, S. P.
2019
 - **Reliability of human cortical organoid generation** *NATURE METHODS*
Yoon, S., Elahi, L. S., Pasca, A. M., Marton, R. M., Gordon, A., Revah, O., Miura, Y., Walczak, E. M., Holdgate, G. M., Fan, H., Huguenard, J. R., Geschwind, D. H., Pasca, et al
2019; 16 (1): 75-+
 - **Organoid and Assembloid Technologies for Investigating Cellular Crosstalk in Human Brain Development and Disease.** *Trends in cell biology*
Marton, R. M., Paşca, S. P.
2019
 - **The hidden biology of the human brain.** *Nature medicine*
Paşca, S. P.
2019
 - **A framework for the investigation of rare genetic disorders in neuropsychiatry.** *Nature medicine*
Sanders, S. J., Sahin, M. n., Hostyk, J. n., Thurm, A. n., Jacquemont, S. n., Avillach, P. n., Douard, E. n., Martin, C. L., Modi, M. E., Moreno-De-Luca, A. n., Raznahan, A. n., Anticevic, A. n., Dolmetsch, et al
2019
 - **Loss of Adaptive Myelination Contributes to Methotrexate Chemotherapy-Related Cognitive Impairment.** *Neuron*
Geraghty, A. C., Gibson, E. M., Ghanem, R. A., Greene, J. J., Ocampo, A. n., Goldstein, A. K., Ni, L. n., Yang, T. n., Marton, R. M., Paşca, S. P., Greenberg, M. E., Longo, F. M., Monje, et al
2019
 - **Cell diversity in the human cerebral cortex: from the embryo to brain organoids.** *Current opinion in neurobiology*
Arlotta, P. n., Paşca, S. P.
2019; 56: 194–98
 - **Polarizing brain organoids.** *Nature biotechnology*
Miura, Y. n., Paşca, S. P.
2019
 - **Inhibitory Interneurons in Hemimegalencephaly: A Survey of 9 Cases**
Lumms, S., Andersen, J., Pasca, S., Kleinschmidt-DeMasters, B., Vogel, H.
OXFORD UNIV PRESS INC.2018: 501
 - **A human cellular model of amyotrophic lateral sclerosis** *NATURE MEDICINE*
Marton, R. M., Pasca, S. P.
2018; 24 (3): 256–57
 - **The ethics of experimenting with human brain tissue.** *Nature*

- Farahany, N. A., Greely, H. T., Hyman, S. n., Koch, C. n., Grady, C. n., Paşca, S. P., Sestan, N. n., Arlotta, P. n., Bernat, J. L., Ting, J. n., Lunshof, J. E., Iyer, E. P., Hyun, et al
2018; 556 (7702): 429–32
- **Absent forebrain replaced by embryonic stem cells.** *Nature*
Andersen, J. n., Paşca, S. P.
2018; 563 (7729): 44–45
 - **Building three-dimensional human brain organoids.** *Nature neuroscience*
2018
 - **The Zika threat to the periphery.** *Nature neuroscience*
Khan, T. A., Paşca, S. P.
2017; 20 (9): 1191-1192
 - **Nondestructive nanostraw intracellular sampling for longitudinal cell monitoring.** *Proceedings of the National Academy of Sciences of the United States of America*
Cao, Y., Hjort, M., Chen, H., Birey, F., Leal-Ortiz, S. A., Han, C. M., Santiago, J. G., Pasca, S. P., Wu, J. C., Melosh, N. A.
2017
 - **MicroRNA-9 Couples Brain Neurogenesis and Angiogenesis.** *Cell reports*
Madelaine, R. n., Sloan, S. A., Huber, N. n., Notwell, J. H., Leung, L. C., Skariah, G. n., Halluin, C. n., Paşca, S. P., Bejerano, G. n., Krasnow, M. A., Barres, B. A., Mourrain, P. n.
2017; 20 (7): 1533–42
 - **Neural Differentiation in the Third Dimension: Generating a Human Midbrain.** *Cell stem cell*
Marton, R. M., Pasca, S. P.
2016; 19 (2): 145-146
 - **Personalized Human Cortical Spheroids.** *American journal of psychiatry*
Pasca, S. P.
2016; 173 (4): 332-333
 - **Cre-dependent selection yields AAV variants for widespread gene transfer to the adult brain.** *Nature biotechnology*
Deverman, B. E., Pravdo, P. L., Simpson, B. P., Kumar, S. R., Chan, K. Y., Banerjee, A., Wu, W., Yang, B., Huber, N., Pasca, S. P., Gradinaru, V.
2016; 34 (2): 204-209
 - **Cre-dependent selection yields AAV variants for widespread gene transfer to the adult brain.** *Nature Biotechnology*
Deverman, B. E., Pravdo, P. L., Simpson, B. P., Kumar, S. R., Chan, K. Y., Banerjee, A., Wu, W., Yang, B., Huber, N., Pasca, S., Gradinaru, V.
2016; 34 (2): 204-9
 - **A deleterious Nav1.1 mutation selectively impairs telencephalic inhibitory neurons derived from Dravet Syndrome patients.** *eLife*
Sun, Y., Pasca, S. P., Portmann, T., Goold, C., Worringer, K. A., Guan, W., Chan, K. C., Gai, H., Vogt, D., Chen, Y. J., Mao, R., Chan, K., Rubenstein, et al
2016; 5
 - **Generating human neurons in vitro and using them to understand neuropsychiatric disease.** *Annual review of neuroscience*
Pasca, S. P., Panagiotakos, G., Dolmetsch, R. E.
2014; 37: 479-501
 - **Alteration in basal and depolarization induced transcriptional network in iPSC derived neurons from Timothy syndrome.** *Genome medicine*
Tian, Y., Voineagu, I., Pasca, S. P., Won, H., Chandran, V., Horvath, S., Dolmetsch, R. E., Geschwind, D. H.
2014; 6 (10): 75-?
 - **Timothy syndrome is associated with activity-dependent dendritic retraction in rodent and human neurons** *NATURE NEUROSCIENCE*
Krey, J. F., Pasca, S. P., Shcheglovitov, A., Yazawa, M., Schwemberger, R., Rasmusson, R., Dolmetsch, R. E.
2013; 16 (2): 201-209
 - **A promoter in the coding region of the calcium channel gene CACNA1C generates the transcription factor CCAT.** *PloS one*
Gomez-Ospina, N., Panagiotakos, G., Portmann, T., Pasca, S. P., Rabah, D., Budzillo, A., Kinet, J. P., Dolmetsch, R. E.
2013; 8 (4)

- **Motor abnormalities as a putative endophenotype for Autism Spectrum Disorders.** *Frontiers in integrative neuroscience*
Esposito, G., Pasca, S. P.
2013; 7: 43-?
- **Using iPSC-derived neurons to uncover cellular phenotypes associated with Timothy syndrome** *NATURE MEDICINE*
Pasca, S. P., Portmann, T., Voineagu, I., Yazawa, M., Shcheglovitov, A., Pasca, A. M., Cord, B., Palmer, T. D., Chikahisa, S., Nishino, S., Bernstein, J. A., Hallmayer, J., Geschwind, et al
2011; 17 (12): 1657-U176
- **Surround modulation of neuronal responses in V1 is as stable over time as responses to direct stimulation of receptive fields** *CORTEX*
Pasca, S. P., Singer, W., Nikolic, D.
2010; 46 (9): 1199-1203
- **Paraoxonase 1 activities and polymorphisms in autism spectrum disorders** *JOURNAL OF CELLULAR AND MOLECULAR MEDICINE*
Pasca, S. P., Dronca, E., Nemes, B., Kaucsar, T., Endreffy, E., Iftene, F., Benga, I., Cornean, R., Dronca, M.
2010; 14 (3): 600-607
- **One carbon metabolism disturbances and the C677T MTHFR gene polymorphism in children with autism spectrum disorders** *JOURNAL OF CELLULAR AND MOLECULAR MEDICINE*
Pasca, S. P., Dronca, E., Kaucsar, T., Craciun, E. C., Endreffy, E., Ferencz, B. K., Iftene, F., Benga, I., Cornean, R., Banerjee, R., Dronca, M.
2009; 13 (10): 4229-4238
- **Vomiting is not an adaption for glaucoma (and Darwinian medicine is difficult)** *MEDICAL HYPOTHESES*
Pasca, S. P., Nesse, R. M.
2008; 71 (3): 472-473
- **Serum paraoxonase 1 activities and homocysteinemia in hemodialysis patients** *CLINICAL CHEMISTRY AND LABORATORY MEDICINE*
Dronca, M., Pasca, S. P., Nemes, B., Vlase, L., Vladutiu, D.
2008; 46 (6): 880-881
- **Behavioral effects of corpus callosum transection and environmental enrichment in adult rats** *BEHAVIOURAL BRAIN RESEARCH*
Miu, A. C., Heilman, R. M., Pasca, S. P., Stefan, C. A., Spanu, F., Vasii, R., Olteanu, A. I., Miclea, M.
2006; 172 (1): 135-144
- **High levels of homocysteine and low serum paraoxonase 1 arylesterase activity in children with autism** *LIFE SCIENCES*
Pasca, S. P., Nemes, B., Vlase, L., Gagy, C. E., Dronca, E., Miu, A. C., Dronca, M.
2006; 78 (19): 2244-2248

PRESENTATIONS

- Assembling Three-Dimensional Models of the Human Brain to Study Development and Disease - Child-X
- Vilcek Award Presentation - Vilcek Foundation
- Minds Wide Open (documentary)