

# Jimena Andersen, Ph.D.

## Assistant Professor, Emory University

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Brain Organoid Hub Website: [brainorganoidhub.com](http://brainorganoidhub.com)

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## EDUCATION

- 2011 – 2015 **MRC National Institute for Medical Research / University College London, UK**  
*Ph.D. in Cell and Developmental Biology*  
Thesis title: Study of *Ascl1* function in the neurogenic lineage of the adult mouse hippocampus.
- 2006 - 2010 **University of Bath, UK**  
*BSc (Hons) degree in Biology*  
Degree result: 1<sup>st</sup> Class Hons

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## PROFESSIONAL APPOINTMENTS

- 2022 – present **Assistant Professor, tenure-track**  
*Emory University School of Medicine, Department of Human Genetics, USA*
- 2015 – 2021 **Postdoctoral Fellow**  
*Stanford University School of Medicine, Psychiatry and Behavioral Sciences, USA*  
Advisor: Sergiu Pașca, M.D.
- 2011 – 2015 **Graduate Student, Ph.D. in Cell and Developmental Biology**  
*Division of Molecular Neurobiology, NIMR / UCL, UK*  
Advisor: François Guillemot, Ph.D.
- 2010 – 2011 **Research Assistant**  
*Plasticell Ltd., London, UK*  
Stem cell media development company. Involved in technology development, protocol optimization, data collection and analysis, and staff training.
- 2010 **Undergraduate Student**  
*Department of Biology and Biochemistry, University of Bath, UK*  
Advisors: David Tosh, Ph.D. and Sue Wonnacott, Ph.D.  
Dissertation title: Influence of nicotinic acetylcholine receptors on murine lung development.
- 2008 – 2009 **Professional Research Placement Student** (Completed with distinction)  
*Department of Psychiatry, Yale University, USA*  
Advisor: Marina Picciotto, Ph.D.  
Dissertation title: Investigating the effects of the nicotinic acetylcholine receptor ligand varenicline in ethanol-related behaviours in mice.

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## AWARDS & FELLOWSHIPS

- 2016 – 2019 **Walter V. and Idun Berry Postdoctoral Fellowship**, Walter V. and Idun Berry Foundation
- 2017 **Sammy Kuo Award for Excellence in Neuroscience Research** (honorable mention), Stanford University Neuroscience Institute
- 2016 **Stanford Medicine Dean's Postdoctoral Fellowship**, Stanford University School of Medicine
- 2013 **Upgrade report prize** (runner up), Medical Research Council
- 2011 – 2015 **Medical Research Council Studentship**, National Institute for Medical Research

1. Kim JI\*, Miura Y\*, Li MY, Revah O, Selvaraj S, Birey F, Xiangling Meng, Thete MV, Pavlov SD, **Andersen J**, Paşca A, Porteus MH, Huguenard JR & Paşca SP. *Human assembloids reveal the consequences of CACNA1G gene variants in the thalamocortical pathway*. 2023, bioRxiv, doi: <https://doi.org/10.1101/2023.03.15.530726>. \*equal contribution.
2. **Andersen J\***, Thom N\*, Shadrach JL, Chen X, Amin ND, Yoon SJ, Greenleaf WJ, Müller F, Paşca A, Kaltschmidt JA, Paşca SP. *Landscape of human spinal cord cell type diversity at midgestation*. **Nature Neuroscience**, in press, 2023. \*equal contribution.
  - Website: <https://devspinalcord.su.domains/>
3. Revah O\*, Gore F\*, Kelley KW\*, **Andersen J**, Sakai N, Chen X, Li MY, Birey F, Yang X, Saw NL, Baker SW, AMIN ND, Kulkarni S, Mudipalli R, Cui B, Nishino S, Gramt GA, Knowles JK, Shamloo M, Huguenard JR, Deisseroth K, Paşca SP. *Maturation and circuit-level integration of transplanted human cortical organoids*. **Nature** 610, 319-326, 2022.
4. Trevino AE\*, Müller F\*, **Andersen J\***, Sundaram L\*, Kathiria A, Shcherbina A, Farh K, Chang HY, Paşca AM, Kundaje A, Paşca SP, Greenleaf WJ. *Chromatin and gene-regulatory dynamics of the developing human cerebral cortex at single-cell resolution*. **Cell** 184, 5053-5069, 2021, \*equal contribution.
  - Website: <https://scbrainregulation.su.domains/>
5. Gordon A, Yoon SJ, Tran SS, Makinson CD, Park JY, **Andersen J**, Valencia AM, Horvath S, Xiaou X, Huguenard JR, Paşca SP, Geschwind DH. *Long term maturation of cortical organoids matches key early postnatal transitions*. **Nature Neuroscience**, 24, 331-342, 2021.
6. **Andersen J**, Revah O, Miura Y, Thom N, Amin ND, Kelley KW, Singh M, Chen X, Thete MV, Walczak EM, Vogel H, Fan C & Paşca SP. *Generation of functional human 3D cortico-motor assembloids*. **Cell** 183, 1913-1929, 2020.
  - Cover resource article
  - Assembloids selected as a *Method to watch* in 2021 by Nature Methods
  - *ALS news today*: Human Cell Model Captures Brain and Muscle Interaction for 1<sup>st</sup> time
7. Trevino AE\*, Sinnott-Armstrong N\*, **Andersen J\***, Yoon SJ, Huber N, Pritchard JK, Chang HY, Greenleaf WJ & Paşca SP. *Chromatin accessibility dynamics in a model of human forebrain development*. **Science** 367 (4476), 2020. \*equal contribution.
  - Website: <http://brainchromatin.stanford.edu/>
8. **Andersen J** & Paşca SP. *Absent forebrain replaced by embryonic stem cells*. **Nature** 563 (7729), 44-45, 2018.
9. Sloan SA\*, **Andersen J\***, Paşca AM\*, Birey F\* & Paşca SP. *Generation and assembly of human brain region-specific 3D cultures*. **Nature Protocols** 13(9):2062-2085, 2018. \*equal contribution.
  - Cover article
10. Birey F\*, **Andersen J\***, Makinson CD\*, Islam S, Wei W, Huber N, Fan HC, Metzler KRC, Panagiotakos G, Thom N, O'Rourke NA, Steinmetz LM, Bernstein JA, Hallmayer J, Huguenard JR & Paşca SP. *Assembly of functionally integrated human forebrain spheroids*. **Nature** 545(7652): 54-59, 2017. \*equal contribution.
  - Recommended by faculty of 1000
  - Selected among Noteworthy Advances in Basic Research of 2017 by the NIH
  - Selected among Top Advances & Breakthroughs of 2017, NARSAD/BBRF
11. Urbán N, van den Berg D, Forget A, **Andersen J**, Demmers JA, Hunt C, Ayrault O & Guillemot F. *Return to quiescence of mouse neural stem cells by degradation of a proactivation protein*. **Science** 353(6296): 292-295, 2016.
12. Heng YH, Zhou B, Harris L, Smith A, Horne B, Martynoga B, **Andersen J**, Achimastou A, Cato K, Richards J, Gronostajski RM, Yeo GS, Guillemot F, Bailey TL & Piper M. *NFIX regulates proliferation and migration within the murine SVZ neurogenic niche*. **Cerebral Cortex** 25(10): 3758-3778, 2014.

13. **Andersen J**, Urbán N, Achimastou A, Ito A, Simic M, Ullom K, Martynoga B, Lebel M, Göritz C, Frisén J, Nakafuku M & Guillemot F. *A transcriptional mechanism integrating inputs from extracellular signals to activate hippocampal stem cells*. **Neuron** 83(5): 1085-97, 2014.
14. Martynoga B, Mateo JL, Zhou B, **Andersen J**, Achimastou A, Urbán N, van den Berg D, Georgopoulou D, Hadjur S, Wittbrodt J, Ettwiller J, Piper M, Gronostajski RM & Guillemot F. *Epigenomic enhancer annotation reveals a key role for NFIX in neural stem cell quiescence*. **Genes & Development** 27(16): 1769-86, 2013.
  - Cover article
15. Kamens HM, **Andersen J** & Picciotto MR. *The Nicotinic Acetylcholine Receptor Partial Agonist Varenicline Increases the Ataxic and Sedative-Hypnotic Effects of Acute Ethanol Administration in C57BL/6J Mice*. **Alcoholism, clinical and experimental research** 34(12): 2053-60, 2010.
16. Kamens HM, **Andersen J** & Picciotto MR. *Modulation of ethanol consumption by genetic and pharmacological manipulation of nicotinic acetylcholine receptors in mice*. **Psychopharmacology (Berl)** 208(4): 613-26, 2010.

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## PATENTS

U.S. Application Serial No. 62/688,924; **J Andersen**, SP Paşca (Filed).  
 "Functional cortical-spinal-muscle assembled spheroids"

U.S. Patent No. 10,676,715; **J Andersen**, F Birey, SP Paşca.  
 "Assembly of functionally integrated human forebrain spheroids and methods of use thereof"

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## ORAL PRESENTATIONS AND INVITED TALKS

March 2023	<b>Finding solutions in a dish: advanced human in vitro modeling approaches for fundamental and translational research</b> , Braga, Portugal (Virtual) <i>Modeling the spinal cord and motor system in vitro</i>
January 2023	<b>13<sup>th</sup> Annual California ALS research summit</b> , San Francisco, USA <i>Human 3D cortico-motor assembloids to model ALS</i>
October 2022	<b>The Scientist Webinar</b> , Online <i>Generating functional cortico-motor assembloids</i>
October 2022	<b>Biological Discovery Through Chemical Innovation Seminar Series</b> , Emory University, USA <i>Human 3D cortico-motor assembloids to study development and disease</i>
August 2022	<b>Frontiers in Neuroscience Seminar Series</b> , Emory University, USA <i>Human 3D cortico-motor assembloids to study development and disease</i>
February 2022	<b>Cedars-Sinai Neuroscience Trainee Meeting</b> , Los Angeles CA, USA (Virtual) <i>Human 3D cortico-motor assembloids to study development and disease</i>
October 2020	<b>EMBL Barcelona Postdoc Seminar Series</b> , Spain (Virtual) <i>Human 3D cortico-motor assembloids to study development and disease</i>
March 2019	<b>SY-Stem Symposium for the Next Generation of Stem Cell Researchers</b> , Vienna, Austria <i>Generating multi-region assembloids in vitro to study human development and disease</i>
June 2018	<b>PCDH19 Alliance Professional &amp; Family Conference</b> , Sonoma CA, USA <i>Developing human cellular models of neurodevelopmental disorders</i>
November 2017	<b>Institute for Stem Cell Biology and Regenerative Medicine Annual Retreat</b> , Carmel CA, USA <i>Assembly of 3D forebrain spheroids to study development and disease</i>

June 2017	<b>Developmental Biology Gordon Research Conference</b> , South Hadley, USA <i>Generating multi-region assembloids in vitro to study human development and disease</i>
October 2014	<b>Glioma Club Meeting</b> , London, UK <i>Ascl1 integrates inputs from extracellular signals to activate hippocampal stem cells</i>

## POSTER PRESENTATIONS

December 2019	<b>Development and 3D Modeling of the Human Brain, Cold Spring Harbor Laboratory, NY, USA</b> • Best Poster Prize
July 2019	<b>ALS and Related Motor Neuron Diseases Gordon Research Conference</b> , West Dover VT, USA
November 2018	<b>Society for Neuroscience Meeting</b> , San Diego CA, USA
September 2018	<b>6<sup>th</sup> Cambridge International Stem Cell Symposium</b> , Cambridge, UK • Flash talk
June 2017	<b>Developmental Biology Gordon Research Conference</b> , South Hadley, USA
November 2016	<b>Society for Neuroscience Meeting</b> , San Diego CA, USA
November 2014	<b>Society for Neuroscience Meeting</b> , Washington DC, USA
June 2013	<b>Eurogenesis Meeting</b> , Bordeaux, France
April 2013	<b>British Neuroscience Association</b> , London, UK
July 2012	<b>Regulation of Adult Neurogenesis</b> , Barcelona, Spain

## TEACHING AND MENTORING

2022 – present	<b>Mentoring</b> , Taylor Pio – Neuroscience Graduate Student, Emory University
2016 – 2022	<b>Mentoring</b> , Nicholas Thom – High School Student, summer intern, Stanford University. Now graduate student at Harvard University.
2020	<b>Mentoring</b> , ADVANCE Summer Institute journal club, Stanford University
2020	<b>Instructor</b> , Stanford Human Brain Organogenesis Workshop, Stanford University
2019 – 2020	<b>Mentoring</b> , Mandeep Singh – LSRP, Stanford University
2017 – 2018	<b>Mentoring</b> , rotation students, Stanford University
2014 – 2015	<b>Teaching</b> , University College London, UK <i>Histology</i> , leader Dr. Greg Campbell: Muscles and Blood vessels (practical, CB-009), Histology of epithelia (practical, FHMP-028). <i>Anatomy</i> , leader Dr. Jeremy E. Cook: The first month of human life (practical, FHMP-041).
2014	<b>Mentoring</b> , various A-level students – National Institute for Medical Research, UK

## OTHER TRAINING AND CONTRIBUTIONS

2022 – present	<b>Reviewer</b> for peer-reviewed journals including Nature Communications, Cell Reports Medicine, Nature Methods, Nature Neuroscience, Development, Scientific Reports, PLOS Biology and Biological Psychiatry
2019	<b>Mentoring in Research Workshop</b> , Stanford University
2018 – 2020	<b>Guest Associate Editor, Frontiers in Molecular Neuroscience.</b> Topic: Fundamentals of 21 <sup>st</sup> century neuroscience
2013	<b>Learn to Lead Residential Course:</b> training in leadership development, including group dynamics, personality types and effective negotiation and communication

2012 – 2013

**NIMR Student Representative:** involved in the organization of a number of student symposia as well as the organization of recreational activities, and the participation in a number of committees

2007

**Volunteer, Scientific Conservation Expedition with Operation Wallacea:**

Biological and social science expedition in Cusuco National Park in Honduras aimed at the protection and conservation of both the biodiversity and wildlife of the park.