SALK INSTITUTE
FOR BIOLOGICAL STUDIES

# MEMORANDUM

**TO:** APPOINTMENTS COMMITTEE CHAIR

**FROM:** RUSTY GAGE, JOHN REYNOLDS AND NICOLA ALLEN

**SUBJECT:** ADJUNCT ASSISTANT PROFESSOR APPOINTMENT OF DR. MARIA CAROLINA MARCHETTO

**DATE:** JUNE 29, 2023

We are writing to provide the strongest possible support for the re-appointment of Dr. Maria Carolina Marchetto as an Adjunct Assistant Professor. Carol is currently an Assistant Professor in the Biological Anthropology Department at UCSD. If re-appointed, Carol will not only continue her collaborative efforts with the Gage Laboratory but will also continue the strong collaborations she has established with other Salk faculty. In addition, Carol looks forward to continuing her association with the Salk Institute as requested and agreed to in her Adjunct Service Form.

Carol has been very productive on many fronts and has a long record of 20 years of interactions and fruitful collaborations with Salk faculty during her postdoc and later when she was promoted to Staff Scientist. During her postdoc in the Gage lab, Carol has pioneered many new areas of study including LINE-1 retrotransposon activation in neural cells and neurological disease modeling using reprogramming technology (Marchetto et al *Cell* 2010). In 2012 she was promoted to Staff Scientist and was one of the pioneers on the use of nonhuman primate stem cell models to investigate unique human brain evolution traits and aging (Marchetto et al *Nature* 2013). She is also currently studying the role of neuroinflammation on psychiatric and neurodegenerative disorders (see CV for more details).

Carol has a passion for mentoring and participates in mentoring undergraduate and graduate students at UCSD and Salk. For example, she currently co-mentors two PhD students with Rusty in the Gage lab (Sarah Fernandes_UCSD Biology and Sheila C Steiner_UCSD Neuroscience) and is on a PhD committee thesis for a student doing his PhD research at the Salk (Kenneth David Kuhn, UCSD, Neuroscience).

To date, her work and collaborative efforts with pioneers in the field of stem cell research, molecular evolution and neuropsychiatry have resulted in publications in high impact journals such as *Cell, Nature*, *Cell Stem Cell*, *Neuron*, *eLife*, *Current Biology*, *Stem Cell Reports*, *PNAS*, *Molecular Psychiatry and Biological Psychiatry*. She continues to follow up on the disease modeling front, leading efforts to establish collaborations with geneticists, bioinformaticians, electrophysiologists and clinicians at Salk, UCSD and other labs around the United States to obtain additional funding, material and collect datasets from different cohorts of patients with neurological diseases to understand the biological basis of neuronal dysfunction in these conditions in both human and nonhuman primate models. She has actively collaborated with over 11 faculty members at Salk and those collaborations generated many peer reviewed articles in prestigious journals over the years (see CV for details). She currently collaborates with Salk faculty on the submission of grant proposals, some of which are currently funded. One of the grants Carol is involved with is the AHA/Allen Consortium, where she continues her collaboration with Salk researchers to study aging-related cognitive decline aspects on short-lived primates (marmosets), utilizing cell lines derived from the Salk marmoset colony, directed by Dr. John Reynolds. Another grant that Carol is a co-PI with Rusty and John is the Larry L. Hillblom Foundation, that seeks to establish the marmoset as a model of aging and of age-related neurodegenerative disease. The major goal of this project is to correlate cognitive, transcriptomic, neuronal, and mitochondrial changes in young, healthy

aging, and cognitively declining marmosets. Carol is also leading efforts to generate and distribute iPSC and iPSC-derived astrocytes from control and Alzheimer's disease patients to other Salk laboratories to study the inflammation component of aging.

Carol has shown a consistent commitment to academic and scientific pursuits; and we believe she will continue to be an excellent adjunct faculty member, continuing to bring her knowledge of human pluripotent stem cells and disease, neurodevelopment, and non-human primate stem cell models to collaborative projects.

Thank you for your consideration of this appointment.

Attached: Marchetto CV, Adjunct Service Form

# MARIA CAROLINA MARCHETTO, Ph.D.

*University of California San Diego*
*500 Gilman Drive, La Jolla, CA 92037, USA* *mcmarchetto@ucsd.edu*

## Education

**2000-2005** Ph.D. in Molecular and Cellular Biology, University of São Paulo, SP, Brazil. *Thesis: "Gene transduction in skin cells: preventing cancer in xeroderma pigmentosum mouse model"* Thesis advisor: Dr. Carlos Menck.

**2003-2004** Exchange Ph.D. Student, University of Texas Southwestern Medical Center at Dallas, TX, USA. Advisor: Dr. Errol Friedberg.

**1996-2000** Bachelor of Science and Educational Science Degree. University of São Paulo, SP, Brazil.

## Research and Professional Experience

**2020-Present** Assistant Professor, Dept. of Biological Anthropology, UCSD, La Jolla, CA, USA.

**2020-Present** Adjunct Assistant Professor, Salk Institute, La Jolla, CA, USA.

**2012-2020** Sr. Staff Scientist, The Salk Institute, La Jolla, CA, USA

**2010-2012** Staff Scientist, The Salk Institute, La Jolla, CA, USA

**2005-2010** Postdoctoral Researcher, The Salk Institute, La Jolla, CA, USA. Mentor: Dr. Fred Gage

**Google Scholar Scores:** Citations, 16977 (all), h-index 53, i10-index 83 - **Google Scholar Link**

## Academic Activities

### Graduate Courses

**2022** Instructor: Advanced Topics in Biological Anthropology: Using stem cell technology to study human origins Human Origins (ANTH 212). UC San Diego.

### Undergraduate Teaching

**2022** Instructor: Human Origins (ANTH 2). UC San Diego.
Instructor: Special Topics in Biological Anthropology (ANBI 100): Brain and the Science of Meditation. UC San Diego.
Instructor: Methods in Human Comparative Neuroscience (ANBI 112). UC San Diego.

**2021** Instructor: Special Topics in Biological Anthropology (ANBI 100): Brain and the Science of Meditation. UC San Diego.

**2020** Invited Lecturer: Methods Biological Anthropology course (ANBI100): identification of pluripotent stem cells and differentiated progeny (neurons, astrocytes) in in live cultures, using Immunofluorescent images to identify different cell types. UC San Diego.

**2019** Invited Lecturer: Methods in Comparative Neuroscience course (ANBI112): Using pluripotent stem cells to study Species-specific maturation profiles of human, chimpanzee and bonobo neural cells. UC San Diego.

**2018** Instructor: Special Topics in Biological Anthropology (ANBI 100): Brain and the Science of Meditation. UC San Diego.

**2018** Invited Lecturer: Beyond the Genome (ANBI 263) UC San Diego.

**2018** Invited Lecturer: Evolution of the Human Brain (ANBI 140) UC San Diego.

**2018** Co-Instructor: Methods in Human Comparative Neuroscience (ANBI 112) UC San Diego.

**2018** Invited Lecturer: 'Using Stem Cells to Model Psychiatric Conditions'. Seminar series for Research & Education in the Sciences, Program at CSU San Marcos.

**2017** Invited Lecturer: Biology 589: Stem Cell & Regenerative Biology San Diego State University.

**2015** Invited lecturer: Workshop on New Technologies for Human Stem Cells. 1-Pluripotent Stem Cells

and Reprogramming, 2-Neural Differentiation and use of CRISPR/CAS9 technology, 3-CNS Disease Modeling Challenges. Center for Molecular Biology and Genetic Engineering (CEBEMEG), University of Campinas, Sao Paulo, Brazil.

**High School Teaching**

**2017** Tutor at San Diego Monarch School for Homeless Students (http://monarchschools.org).
**2017** Invited Lecturer at the School for Entrepreneurship & Technology, San Diego, CA.
**2015** Panelist for the Salk Institute STEAM Leadership Series, La Jolla, CA.
**2014** Invited Lecturer at the Saturday Science Club for Girls "Brain Games: Using non-human primate stem cells to study evolution", at the Reuben H. Fleet Science Center, San Diego, CA.
**2014** Invited Lecturer at Entrepreneurial Lecture Series at La Jolla Country Day School. "Fighting Autism One Cell At A Time" (La Jolla, CA. February, 28, 2014).
**2013** Group Speaker at March of Dimes High School Science Day at the Salk Institute.
**2012** Invited Lecturer at web conference on stem cells for Smith College (Northampton, MA).

**Mentorship**

**2022** Sarah Fernandes, PhD Student, Biology Dept, UCSD, Co-advisor with Dr Gage
**2021** Sheila Stern, PhD Student, Neuroscience Dept, UCSD, Co-advisor with Dr Gage
**2021** Autumn Hudock, PhD student, Anthropology Dept, UCSD, Advisor
**2020** Isabel August, PhD student, Anthropology Dept, UCSD, Co-Advisor with Dr Semendeferi
**2019** Jack Whiteley, Undergraduate in senior year at University of California, San Diego, CA
**2018** Xiaochun Cai, BS, Rotation Project Supervisor, University of California San Diego, CA.
**2017-2019** Vipula Racha, Undergraduate in junior year at University of California San Diego, CA.
**2017** Adriana Guetter, Undergraduate in junior year at University of California San Diego, CA.
**2015-2016** Sabrina Lefcochilos-Fogelquis, BS, Volunteer (Georgetown College, Washington, DC).
**2015-2016** Rea S Xenitopoulos, high school intern (High Tech High International, San Diego, CA).
**2014** Meiyan Wang, BS, Rotation Project Supervisor, University of California San Diego,CA.
**2013** Carissa Crawford, BS, Volunteer (Dartmouth College, Hanover, NH).
**2012** Lauren Bertin, high school intern (Bennington College, Bennington, VT).
**2011-2012** Yanelli Nunez, Undergraduate in senior year at San Diego State University, CA.

**Awards and Fellowships**

**2017** Selected participant to the 2017 BRAINS Fellows Program.
**2016** AACC's Outstanding Speaker Award for 2015.
**2014-2016** Research Collaboration Fellowship from Janssen R&D, San Diego, CA.
**2015** Selected for Alda-Kavli Leadership Program on Communicating Science.
**2009-2011** Christopher and Danna Reeves Foundation (CDRF) Fellowship.
**2006-2008** George E. Hewitt Foundation Medical Research Postdoctoral Fellowship.
**2003** Xeroderma Pigmentosum Society Exchange PhD Fellowship.
**2002** FAPESP PhD Fellowship, São Paulo, Brazil.

**Professional Societies**

**2018 -present** Member, American Association of Physical Anthropologists (AAPA).
**2016 -present** Member, Molecular Psychiatry Association (MPA).
**2008 -present** Member, Society for Neuroscience (SFN).
**2007 -present** Member, International Society for Stem Cell Research (ISSCR).

**Journal Referee**

**2022-present** *Science*
**2018 -present** *Molecular Neurobiology, Frontiers Cell. Neurosci.*
**2016 -present** *Human Molecular Genetics*, *Molecular Autism*, *Biol. Psychiatry*
**2015 -present** *Cell Stem Cell, Nature Communications, JoVE*
**2014 -present** *Stem Cell Reports, Human Molecular Genetics*
**2011 -present** *Stem Cells International, Cell Transplantation*

**2009 -present** *Tissue Engineering, PLoSONE*

**Abstract and Grant Referee**

**2022** Grant Reviewer for T. Denny Sanford Institute for Empathy and Compassion (UCSD)
**2022** Grant Reviewer for the National Institutes of Heath (NIH), Neurogenesis and Cell Fate (NCF) Study Section.
**2022-present** Grant Reviewer for the Sao Paulo State Research Foundation (FAPESP): Research, Innovation and Dissemination Centers (RIDC), Brazilian Institute of Neuroscience and Neurotechnology (BRAINN).
**2017** Irish Research Council Laureate Awards Programme.
**2016 -present** Abstract Reviewer for the International Society for Stem Cell Research (ISSCR).
**2014 -present** Wings for Life Research Grant.

**Research Support**

**R03 MH115426-01A1 (Role: Principal Investigator)** Duration: 07/01/2018-06/30/2020
NIH/NIMH Requested Funding: $50,000/year
Title: Transcriptional signature profiling of IGF1-treated neural cells from idiopathic autistic patients. The major goal of this project is to increase our understanding of the molecular mechanisms underlying IGF1-therapeutic activity in neural cells, in the context of Autism Spectrum Disorder. *(Status: Granted*).

**Network Grant application (#2020-A-001-NET) (Role: Co-PI)** Duration: 11/02/2020-11/02/2024
Larry L. Hillblom Foundation, Inc. Requested Funding: $300,000/year
Title: The marmoset as a model of aging and of age-related neurodegenerative disease. The major goal of this project is to correlate cognitive, transcriptomic, neuronal, and mitochondrial changes in young, healthy aging, and cognitively declining marmosets. *(Status: Granted)*.

**Publications**

**Patent Applications**
US Provisional Number:
61/163379 Pluripotent Stem Cells
US2010/028524 Pluripotent Stem Cells
61/231663 Methods of Measuring L1 Retrotransposition
61/273599 Retroelements and Mental Disorders
61/289863 Methods and Compositions for Treating Neurological Disorders

**Selected Media**
**2022-** Invited speaker on Center for Academic Research and Training in anthropology public Symposium on "*Imagining the Future of Anthropogeny*". Link:
https://www.uctv.tv/shows/CARTA-Imagining-the-Future-of-Anthropogeny-Symposium-Welcome-and-Opening-Remarks-38296
**2022-**Host on the *Stem Cell Reports Podcast: Modeling Neuropsychiatric disorders in a dish.* Link:
https://thestemcellreport.buzzsprout.com/1661578/11308321-modeling-neuropsychiatric-disorders-in-a-dish
**2021:** Invited speaker on Center for Academic Research and Training in anthropology public Symposium on "*Comparative Anthropogeny: From Molecules to Societies*". Link:
https://www.uctv.tv/shows/CARTA-Comparative-Anthropogeny-From-Molecules-to-Societies-Questions-Answers-and-Closing-Remarks-37534
**2018**- Invited Panelist on Cell Gene-Meeting on the Mesa, La Jolla, CA. *Using Stem Cell Models to Study Bipolar Disorders*. Link:
https://www.youtube.com/watch?v=2jPruUIvO9E
**2015**- Invited speaker on Public Webinar from Axion Biosciences, "Advancing neuroscience: functional insights from in vitro microelectrode arrays: Probing Neural Phenotype in Autism and Other Neuropsychiatric Diseases" October 7, 2015. Link: Public Webinar

**2014-** Invited speaker for the *Women and Science Program* at the Salk Institute, La Jolla, CA "Using Stem Cells to Research Autism Spectrum Disorder". September, 2014. Link: Public Seminar
**2012-** Invited speaker for Web Conference for the Neuroscience Program at the Smith College, Northampton, MA on *Modeling Autism Spectrum Disorder Using Stem Cells*.
https://vimeo.com/327803115

**Book Chapters**

**Marchetto MC** & Semendeferi K. Chapter 6: Primate Cognition: cellular processes and the developmental mechanisms in brain expansion. *In* Evolutionary Cell Processes in Primates Bone, Brains, and Muscle, Volume I. Edited by M. Kathleen Pitirri, Joan T. Richtsmeier. CRC Press, 530 pp. ISBN 0-367-43767-1. 2022.
**Marchetto, M.C.** & Gage, F.H. Your brain under the microscope: the promise of stem cells. *In* Cerebrum Anthology 2014: *Emerging ideas in Brain Science.* By Editor Bill Glovin. Dana Press E. 2015.
**Marchetto, M.C.**; Muotri, A. R. & Gage, F. H. Proposing a model for studying primate development using induced pluripotent stem cells. *In* Programed Cells: From Basic Neuroscience to Therapy. IPSEN Foundation Ed. 2013.
Muotri, A. R.; **Marchetto, M.C.** & Gage, F. H. From the "RNA World" to brain complexity: generation of diversity. *In* Retrotransposition, Diversity and the Brain IPSEN Foundation Ed. 2007.

**Peer-Reviewed Publications**

For a complete list: https://pubmed.ncbi.nlm.nih.gov/?term=marchetto+mc&sort=pubdate

99. Niemsiri V, Rosenthal SB, Nievergelt CM, Maihofer AX, **Marchetto MC**, Santos R, Shekhtman T, Alliey-Rodriguez N, Anand A, Balaraman Y, Berrettini WH, Bertram H, Burdick KE, Calabrese JR, Calkin CV, Conroy C, Coryell WH, DeModena A, Eyler LT, Feeder S, Fisher C, Frazier N, Frye MA, Gao K, Garnham J, Gershon ES, Goes FS, Goto T, Harrington GJ, Jakobsen P, Kamali M, Kelly M, Leckband SG, Lohoff FW, McCarthy MJ, McInnis MG, Craig D, Millett CE, Mondimore F, Morken G, Nurnberger JI, Donovan CO, Ødegaard KJ, Ryan K, Schinagle M, Shilling PD, Slaney C, Stapp EK, Stautland A, Tarwater B, Zandi PP, Alda M, Fisch KM, Gage FH, Kelsoe JR. Focal adhesion is associated with lithium response in bipolar disorder: evidence from a network-based multi-omics analysis. Mol Psychiatry. 2023 Mar 29. doi: 10.1038/s41380-022-01909-9. Epub ahead of print. PMID: 36991131.

98. August I, Semendeferi K, **Marchetto MC**. Brain aging, Alzheimer's disease, and the role of stem cells in primate comparative studies. *J Comp Neurol*. 2022 Dec;530(17):2940-2953. doi: 10.1002/cne.25394. Epub 2022 Aug 5. PMID: 35929189.

97. Linker SB, Narvaiza I, Hsu JY, Wang M, Qiu F, Mendes APD, Oefner R, Kottilil K, Sharma A, Randolph-Moore L, Mejia E, Santos R, **Marchetto MC**, Gage FH. Human-specific regulation of neural maturation identified by cross-primate transcriptomics. *Curr Biol*. 2022 Nov 21;32(22):4797-4807.e5. doi: 10.1016/j.cub.2022.09.028. Epub 2022 Oct 12. PMID: 36228612.

96. van den Hurk M, Lau S, **Marchetto MC**, Mertens J, Stern S, Corti O, Brice A, Winner B, Winkler J, Gage FH, Bardy C. Druggable transcriptomic pathways revealed in Parkinson's patient-derived midbrain neurons. *NPJ Parkinsons Dis.* 2022 Oct 18;8(1):134. doi: 10.1038/s41531-022-00400-0. PMID: 36258029; PMCID: PMC9579158.

95. Stern S, Lau S, Manole A, Rosh I, Percia MM, Ben Ezer R, Shokhirev MN, Qiu F, Schafer S, Mansour AA, Mangan KP, Stern T, Ofer P, Stern Y, Diniz Mendes AP, Djamus J, Moore LR, Nayak R, Laufer SH, Aicher A, Rhee A, Wong TL, Nguyen T, Linker SB, Winner B, Freitas BC, Jones E, Sagi I, Bardy C, Brice A, Winkler J, **Marchetto MC**, Gage FH. Reduced synaptic activity and dysregulated extracellular matrix pathways in midbrain neurons from Parkinson's disease patients. *NPJ Parkinsons Dis.* 2022 Aug 10;8(1):103. doi: 10.1038/s41531-022-00366-z. PMID: 35948563; PMCID: PMC9365794.

94. van Niekerk EA, Kawaguchi R, Marques de Freria C, Groeniger K, **Marchetto MC**, Dupraz S, Bradke F, Geschwind DH, Gage FH, Tuszynski MH. Methods for culturing adult CNS neurons reveal a CNS conditioning effect. *Cell Rep Methods*. 2022 Jul 18;2(7):100255. doi: 10.1016/j.crmeth.2022.100255. PMID: 35880023; PMCID: PMC9308166.

93. Santos R, Mei A, **Marchetto MC**. Generation of inflammation-responsive astrocytes from glial progenitors derived from human pluripotent stem cells. *STAR Protoc*. 2022 Mar 17;3(2):101261. doi: 10.1016/j.xpro.2022.101261. PMID: 35313707; PMCID: PMC8933838.

92. Whiteley JT, Fernandes S, Sharma A, Mendes APD, Racha V, Benassi SK, **Marchetto MC**. Reaching into the toolbox: Stem cell models to study neuropsychiatric disorders. *Stem Cell Reports*. 2022 Feb 8;17(2):187-210. doi: 10.1016/j.stemcr.2021.12.015. Epub 2022 Jan 20. PMID: 35063127; PMCID: PMC8828548.

91. Fernandes S, Klein D, **Marchetto MC**. Unraveling Human Brain Development and Evolution Using Organoid Models. Front Cell Dev Biol. 2021 Oct 7;9:737429. doi: 10.3389/fcell.2021.737429. PMID: 34692694; PMCID: PMC8529117.

90. Vadodaria KC, Mendes APD, Mei A, Racha V, Erikson G, Shokhirev MN, Oefner R, Heard KJ, McCarthy MJ, Eyler L, Kelsoe JR, Santos R, **Marchetto MC**, Gage FH. Altered Neuronal Support and Inflammatory Response in Bipolar Disorder Patient-Derived Astrocytes. *Stem Cell Reports*. 2021 Feb 23:S2213-6711(21)00084-9. doi: 10.1016/j.stemcr.2021.02.004. Online ahead of print. PMID: 33667413.

89. Santos R, Linker SB, Stern S, Mendes APD, Shokhirev MN, Erikson G, Randolph-Moore L, Racha V, Kim Y, Kelsoe JR, Bang AG, Alda M, **Marchetto MC**, Gage FH. Deficient LEF1 expression is associated with lithium resistance and hyperexcitability in neurons derived from bipolar disorder patients. *Mol Psychiatry*. 2021 Jan 4. doi: 10.1038/s41380-020-00981-3. PMID: 33398088.

88. Sun G, Chiuppesi F, Chen X, Wang C, Tian E, Nguyen J, Kha M, Trinh D, Zhang H, **Marchetto MC**, Song H, Ming GL, Gage FH, Diamond DJ, Wussow F, Shi Y. Modeling Human Cytomegalovirus-Induced Microcephaly in Human iPSC-Derived Brain Organoids. *Cell Rep Med*. 2020 Mar 25;1(1):100002. doi: 10.1016/j.xcrm.2020.100002. eCollection 2020 Apr 21. PMID: 33205055 Free PMC article.

87. Figueiredo T, Mendes APD, Moreira DP, Goulart E, Oliveira D, Kobayashi GS, Stern S, Kok F, **Marchetto MC**, Santos R, Gage FH, Zatz M. Inositol monophosphatase 1 (IMPA1) mutation in intellectual disability patients impairs neurogenesis but not gliogenesis. *Mol Psychiatry*. 2020 Aug 24. doi: 10.1038/s41380-020-00862-9. Online ahead of print. PMID: 32839513

86. Linker SB, Mendes APD, **Marchetto MC.** IGF-1 treatment causes unique transcriptional response in neurons from individuals with idiopathic autism. *Mol Autism*. 2020 Jun 26;11(1):55. doi: 10.1186/s13229-020-00359-w. PMID: 32591005 Free PMC article.

85. Freitas BC, Beltrão-Braga PCB, **Marchetto MC.** Modeling Inflammation on Neurodevelopmental Disorders Using Pluripotent Stem Cells. *Adv Neurobiol.* 2020. 25:207-218. doi: 10.1007/978-3-030-45493-7_7. PMID: 32578148 Review.

84. Wenderski W, Wang L, Krokhotin A, Walsh JJ, Li H, Shoji H, Ghosh S, George RD, Miller EL, Elias L, Gillespie MA, Son EY, Staahl BT, Baek ST, Stanley V, Moncada C, Shipony Z, Linker SB, **Marchetto MCN**, Gage FH, Chen D, Sultan T, Zaki MS, Ranish JA, Miyakawa T, Luo L, Malenka RC, Crabtree GR, Gleeson JG. Loss of the neural-specific BAF subunit ACTL6B relieves repression of early response genes and causes recessive autism. *Proc Natl Acad Sci U S A*. 2020 May 5;117(18):10055-10066. doi: 10.1073/pnas.1908238117. Epub 2020 Apr 20. PMID: 32312822 Free PMC article.

83. Stern S, Sarkar A, Galor D, Stern T, Mei A, Stern Y, Mendes APD, Randolph-Moore L, Rouleau G, Bang AG, Santos R, Alda M, **Marchetto MC**, Gage FH. A Physiological Instability Displayed in Hippocampal Neurons Derived From Lithium-Nonresponsive Bipolar Disorder Patients. *Biol Psychiatry*. 2020 Jul 15;88(2):150-158. doi: 10.1016/j.biopsych.2020.01.020. Epub 2020 Feb 4. PMID: 32278494.

82. Shen W, Wang QW, Liu YN, **Marchetto MC**, Linker S, Lu SY, Chen Y, Liu C, Guo C, Xing Z, Shi W, Kelsoe JR, Alda M, Wang H, Zhong Y, Sui SF, Zhao M, Yang Y, Mi S, Cao L, Gage FH, Yao J. Synaptotagmin-7 is a key factor for bipolar-like behavioral abnormalities in mice. *Proc Natl Acad Sci U S A.* 2020 Feb 25;117(8):4392-4399. doi: 10.1073/pnas.1918165117. Epub 2020 Feb 10. PMID: 32041882 Free PMC article.

81. Stern S, Linker S, Vadodaria KC, **Marchetto MC**, Gage FH. Prediction of Response to Drug Therapy in Psychiatric Disorders. *Focus (Am Psychiatr Publ)*. 2019 Jul;17(3):294-307. doi: 10.1176/appi.focus.17304. Epub 2019 Jul 16. PMID: 32015721 Free PMC article. Review.

80. Wang M, Wei PC, Lim CK, Gallina IS, Marshall S, **Marchetto MC**, Alt FW, Gage FH. Increased Neural Progenitor Proliferation in a hiPSC Model of Autism Induces Replication Stress-Associated Genome Instability. *Cell Stem Cell*. 2020 Feb 6;26(2):221-233.e6. doi: 10.1016/j.stem.2019.12.013. Epub 2020 Jan 30. PMID: 32004479

79. Stern S, Sarkar A, Stern T, Mei A, Mendes APD, Stern Y, Goldberg G, Galor D, Nguyen T, Randolph-Moore L, Kim Y, Rouleau G, Bang A, Alda M, Santos R, **Marchetto MC**, Gage FH. Mechanisms Underlying the Hyperexcitability of CA3 and Dentate Gyrus Hippocampal Neurons Derived From Patients With Bipolar Disorder. *Biol Psychiatry*. 2020 Jul 15;88(2):139-149. doi: 10.1016/j.biopsych.2019.09.018. Epub 2019 Oct 1. PMID: 31732108

78. Amatya DN, Linker SB, Mendes APD, Santos R, Erikson G, Shokhirev MN, Zhou Y, Sharpee T, Gage FH, **Marchetto MC**, Kim Y. Dynamical Electrical Complexity Is Reduced during Neuronal Differentiation in Autism Spectrum Disorder. *Stem Cell Reports*. 2019 Sep 10;13(3):474-484. doi: 10.1016/j.stemcr.2019.08.001. Epub 2019 Aug 29. PMID: 31474529 Free PMC article.

77. Quraishi IH, Stern S, Mangan KP, Zhang Y, Ali SR, Mercier MR, **Marchetto MC**, McLachlan MJ, Jones EM, Gage FH, Kaczmarek LK. An Epilepsy-Associated KCNT1 Mutation Enhances Excitability of Human iPSC-Derived Neurons by Increasing Slack $K_{Na}$ Currents. *J Neurosci*. 2019 Sep 11;39(37):7438-7449. doi: 10.1523/JNEUROSCI.1628-18.2019. Epub 2019 Jul 26. PMID: 31350261 Free PMC article.

76. Vadodaria KC, Ji Y, Skime M, Paquola AC, Nelson T, Hall-Flavin D, Heard KJ, Fredlender C, Deng Y, Elkins J, Dani K, Le AT, **Marchetto MC**, Weinshilboum R, Gage FH. Altered serotonergic circuitry in SSRI-resistant major depressive disorder patient-derived neurons. *Mol Psychiatry.* 2019 Jun;24(6):808-818. doi: 10.1038/s41380-019-0377-5. Epub 2019 Mar 22. PMID: 30903001

75. **Marchetto MC**, Hrvoj-Mihic B, Kerman BE, Yu DX, Vadodaria KC, Linker SB, Narvaiza I, Santos R, Denli AM, Mendes AP, Oefner R, Cook J, McHenry L, Grasmick JM, Heard K, Fredlender C, Randolph-Moore L, Kshirsagar R, Xenitopoulos R, Chou G, Hah N, Muotri AR, Padmanabhan K, Semendeferi K, Gage FH. Species-specific maturation profiles of human, chimpanzee and bonobo neural cells. *Elife*. Feb 7;8. pii: e37527. (2019)

74. Vadodaria KC, Ji Y, Skime M, Paquola A, Nelson T, Hall-Flavin D, Fredlender C, Heard KJ, Deng Y, Le AT, Dave S, Fung L, Li X, **Marchetto MC**, Weinshilboum R, Gage FH. Serotonin-induced hyperactivity in SSRI-resistant major depressive disorder patient-derived neurons. *Mol Psychiatry*. Jan 30 (2019)

73. Schafer ST, Paquola ACM, Stern S, Gosselin D, Ku M, Pena M, Kuret TJM, Liyanage M, Mansour AA, Jaeger BN, **Marchetto MC**, Glass CK, Mertens J, Gage FH. Pathological priming causes developmental gene network heterochronicity in autistic subject-derived neurons. *Nat Neurosci*. Feb;22(2):243-255. (2019)

72. Kim Y, Vadodaria KC, Lenkei Z, Kato T, Gage FH, **Marchetto MC**, Santos R. Mitochondria, Metabolism, and Redox Mechanisms in Psychiatric Disorders. *Antioxid Redox Signal.* Feb 1 (2019)

71. Freitas BC, Mei A, Mendes APD, Beltrão-Braga PCB, **Marchetto MC**. Modeling Inflammation in Autism Spectrum Disorders Using Stem Cells. *Front Pediatr*. Dec 12;6:394. (2018)

70. Stern S, Linker S, Vadodaria KC, **Marchetto MC**, Gage FH. Prediction of response to drug therapy in psychiatric disorders. *Open Biol*. 2018 May;8(5). pii: 180031. doi: 10.1098/rsob.180031. (2018)

69. Sarkar A, Mei A, Paquola ACM, Stern S, Bardy C, Klug JR, Kim S, Neshat N, Kim HJ, Ku M, Shokhirev MN, Adamowicz DH, **Marchetto MC**, Jappelli R, Erwin JA, Padmanabhan K, Shtrahman M, Jin X, Gage FH. Efficient Generation of CA3 Neurons from Human Pluripotent Stem Cells Enables Modeling of Hippocampal Connectivity In Vitro. *Cell Stem Cell*. May 3;22(5):684-697.e9. doi: 10.1016/j.stem.2018.04.009. (2018)

68. Vőfély G, Berecz T, Szabó E, Szebényi K, Hathy E, Orbán TI, Sarkadi B, Homolya L, **Marchetto MC**, Réthelyi JM, Apáti Á. Characterization of calcium signals in human induced pluripotent stem cell-derived dentate gyrus

neuronal progenitors and mature neurons, stably expressing an advanced calcium indicator protein. *Mol Cell Neurosci.* Feb 6;88:222-230. (2018)

67. Vadodaria KC, Amatya DN, **Marchetto MC**, Gage FH. Modeling psychiatric disorders using patient stem cell-derived neurons: a way forward. *Genome Med*. Jan 4;10(1):1. (2018)

66. Vadodaria KC, Stern S, **Marchetto MC**, Gage FH. Serotonin in psychiatry: in vitro disease modeling using patient-derived neurons. Cell Tissue Res. Jan;371(1):161-170. Epub 2017 Aug 15. Review. (2018)

65. Linker SB, **Marchetto MC**, Narvaiza I, Denli AM, Gage FH. Examining non-LTR retrotransposons in the context of the evolving primate brain. *BMC Biol*. Aug 11;15(1):68. Review. (2017)

64. Newkirk SJ, Lee S, Grandi FC, Gaysinskaya V, Rosser JM, Vanden Berg N, Hogarth CA, **Marchetto MC**, Muotri AR, Griswold MD, Ye P, Bortvin A, Gage FH, Boeke JD, An W. Intact piRNA pathway prevents L1 mobilization in male meiosis. *Proc Natl Acad Sci U S A*. Jul 11;114(28):E5635-E5644. (2017)

63. Santos R, Vadodaria KC, Jaeger BN, Mei A, Lefcochilos-Fogelquist S, Mendes APD, Erikson G, Shokhirev M, Randolph-Moore L, Fredlender C, Dave S, Oefner R, Fitzpatrick C, Pena M, Barron JJ, Ku M, Denli AM, Kerman BE, Charnay P, Kelsoe JR, **Marchetto MC**, Gage FH. Differentiation of Inflammation-Responsive Astrocytes from Glial Progenitors Generated from Human Induced Pluripotent Stem Cells. *Stem Cell Reports*. Jun 6;8(6):1757-1769. (2017)

62. Kim Y, Santos R, Gage FH, **Marchetto MC**. Molecular Mechanisms of Bipolar Disorder: Progress Made and Future Challenges. *Front Cell Neurosci*. Feb 14;11:30. eCollection 2017 Feb 14. (2017)

61. Ramsay L, **Marchetto MC**, Caron M, Chen SH, Busche S, Kwan T, Pastinen T, Gage FH, Bourque G. Conserved expression of transposon-derived non-coding transcripts in primate stem cells. *BMC Genomics*. Feb 28;18(1):214. (2017).

60. Stern S, Santos R, **Marchetto MC**, Mendes AP, Rouleau GA, Biesmans S, Wang QW, Yao J, Charnay P, Bang AG, Alda M, Gage FH. Neurons derived from patients with bipolar disorder divide into intrinsically different sub-populations of neurons, predicting the patients' responsiveness to lithium. *Mol Psychiatry*. Feb 28. (2017).

59. Vadodaria KC, **Marchetto MC**, Mertens J, Gage FH. Generating human serotonergic neurons in vitro: Methodological advances. *Bioessays*. Nov;38(11):1123-1129. (2016)

58. Chailangkarn T, Trujillo CA, Freitas BC, Hrvoj-Mihic B, Herai RH, Yu DX, Brown TT, **Marchetto MC**, Bardy C, McHenry L, Stefanacci L, Järvinen A, Searcy YM, DeWitt M, Wong W, Lai P, Ard MC, Hanson KL, Romero S, Jacobs B, Dale AM, Dai L, Korenberg JR, Gage FH, Bellugi U, Halgren E, Semendeferi K, Muotri AR. A human neurodevelopmental model for Williams syndrome. *Nature*. Aug 18;536(7616):338-43. (2016)

57. Nuttle X, Giannuzzi G, Duyzend MH, Schraiber JG, Narvaiza I, Sudmant PH, Penn O, Chiatante G, Malig M, Huddleston J, Benner C, Camponeschi F, Ciofi-Baffoni S, Stessman HA, **Marchetto MC**, Denman L, Harshman L, Baker C, Raja A, Penewit K, Janke N, Tang WJ, Ventura M, Banci L, Antonacci F, Akey JM, Amemiya CT, Gage FH, Reymond A, Eichler EE. Emergence of a Homo sapiens-specific gene family and chromosome 16p11.2 CNV susceptibility. *Nature*. Aug 11;536(7615):205-9. (2016)

56. **Marchetto MC**, Belinson H, Tian Y, Freitas BC, Fu C, Vadodaria KC, Beltrao-Braga PC, Trujillo CA, Mendes AP, Padmanabhan K, Nunez Y, Ou J, Ghosh H, Wright R, Brennand KJ, Pierce K, Eichenfield L, Pramparo T, Eyler LT, Barnes CC, Courchesne E, Geschwind DH, Gage FH, Wynshaw-Boris A, Muotri AR. Altered proliferation and networks in neural cells derived from idiopathic autistic individuals. *Mol Psychiatry*. Jun;22(6):820-835. (2016)

55. Franks TM, Benner C, Narvaiza I, **Marchetto MC**, Young JM, Malik HS, Gage FH, Hetzer MW. Evolution of a transcriptional regulator from a transmembrane nucleoporin. *Genes Dev.* May 15;30(10):1155-71. (2016)

54. Mertens J, **Marchetto MC**, Bardy C, Gage FH. Evaluating cell reprogramming, differentiation and conversion technologies in neuroscience. *Nat Rev Neurosci*. Jul;17(7):424-37. Epub May 19 (2016).

53. Otani T, **Marchetto MC**, Gage FH, Simons BD, Livesey FJ. 2D and 3D Stem Cell Models of Primate Cortical Development Identify Species-Specific Differences in Progenitor Behavior Contributing to Brain Size. *Cell Stem Cell*. 2016 Apr 7;18(4):467-80. Epub Mar 31 (2016).

52. Tang X, Kim J, Zhou L, Wengert E, Zhang L, Wu Z, Carromeu C, Muotri AR, **Marchetto MC**, Gage FH, Chen G. KCC2 rescues functional deficits in human neurons derived from patients with Rett syndrome. *Proc Natl Acad*

*Sci U S A*. Jan 19;113(3):751-6 (2016).

51. Sarkar A, **Marchetto MC**, Gage FH. Synaptic activity: An emerging player in schizophrenia. *Brain Res*. Dec 23 (2015).

50. Brennand KJ, **Marchetto MC**, Benvenisty N, Brüstle O, Ebert A, Izpisua Belmonte JC, Kaykas A, Lancaster MA, Livesey FJ, McConnell MJ, McKay RD, Morrow EM, Muotri AR, Panchision DM, Rubin LL, Sawa A, Soldner F, Song H, Studer L, Temple S, Vaccarino FM, Wu J, Vanderhaeghen P, Gage FH, Jaenisch R. Creating Patient-Specific Neural Cells for the In Vitro Study of Brain Disorders. [Epub ahead of print] *Stem Cell Reports*. Nov 20, (2015).

49. Mertens J, Wang QW, Kim Y, Yu DX, Pham S, Yang B, Zheng Y, Diffenderfer KE, Zhang J, Soltani S, Eames T, Schafer ST, Boyer L, **Marchetto MC**, Nurnberger JI, Calabrese JR, Ødegaard KJ, McCarthy MJ, Zandi PP, Alba M, Nievergelt CM; Pharmacogenomics of Bipolar Disorder Study, Mi S, Brennand KJ, Kelsoe JR, Gage FH, Yao J. Differential responses to lithium in hyperexcitable neurons from patients with bipolar disorder. *Nature*. Nov 5;527(7576):95-9 (2015).

48. Vadodaria KC, Mertens J, Paquola A, Bardy C, Li X, Jappelli R, Fung L, **Marchetto MC**, Hamm M, Gorris M, Koch P, Gage FH. Generation of functional human serotonergic neurons from fibroblasts. *Mol Psychiatry*. Oct 27. [Epub ahead of print] (2015).

47. Denli AM, Narvaiza I, Kerman BE, Pena M, Benner C, **Marchetto MC**, Diedrich JK, Aslanian A, Ma J, Moresco JJ, Moore L, Hunter T, Saghatelian A, Gage FH. Primate-Specific ORF0 Contributes to Retrotransposon-Mediated Diversity. *Cell*. Oct 22;163(3):583-93 (2015).

46. Prescott SL, Srinivasan R, **Marchetto MC**, Grishina I, Narvaiza I, Selleri L, Gage FH, Swigut T, Wysocka J. Enhancer Divergence and cis-Regulatory Evolution in the Human and Chimp Neural Crest. *Cell*. Sep 24;163(1):68-83 (2015).

45. Griesi-Oliveira K, Acab A, Gupta AR, Sunaga DY, Chailangkarn T, Nicol X, Nunez Y, Walker MF, Murdoch JD, Sanders SJ, Fernandez TV, Ji W, Lifton RP, Vadasz E, Dietrich A, Pradhan D, Song H, Ming GL, Gu X, Haddad G, **Marchetto MC**, Spitzer N, Passos-Bueno MR, State MW, Muotri AR. Modeling non-syndromic autism and the impact of TRPC6 disruption in human neurons. *Mol Psychiatry*. 2014 Nov 11. doi: 10.1038/mp.2014.141. [Epub ahead of print]. (2014)

44. Erwin JA, **Marchetto MC**, Gage FH. Mobile DNA elements in the generation of diversity and complexity in the brain. *Nat Rev Neurosci*. Jul 9. doi: 10.1038/nrn3730. [Epub ahead of print] (2014)

43. Stein JL, de la Torre-Ubieta L, Tian Y, Parikshak NN, Hernández IA, **Marchetto MC**, Baker DK, Lu D, Hinman CR, Lowe JK, Wexler EM, Muotri AR, Gage FH, Kosik KS, Geschwind DH. A quantitative framework to evaluate modeling of cortical development by neural stem cells. *Neuron*. Jul 2;83(1):69-86. (2014).

42. Yu DX, **Marchetto MC**, Gage FH. Development. How to make a hippocampal dentate gyrus granule neuron. *Development*: 141(12):2366-75. (2014).

41. Winner B, **Marchetto MC**, Winkler J, Gage FH. Human-induced pluripotent stem cells pave the road for a better understanding of motor neuron disease. *Hum Mol Genet*. May 12 (2014).

40. Yu DX, Di Giorgio FP, Yao J, **Marchetto MC**, Brennand K, Wright R, Mei A, McHenry L, Lisuk D, Grasmick JM, Silberman P, Silberman G, Jappelli R, Gage FH. Modeling hippocampal neurogenesis using human pluripotent stem cells. *Stem Cell Reports*. Feb 27 (2014).

39. Havlicek S, Kohl Z, Mishra HK, Prots I, Eberhardt E, Denguir N, Wend H, Plötz S, Boyer L, **Marchetto MC**, Aigner S, Sticht H, Groemer TW, Hehr U, Lampert A, Schlötzer-Schrehardt U, Winkler J, Gage FH, Winner B. Gene dosage-dependent rescue of HSP neurite defects in SPG4 patients' neurons. *Hum Mol Genet*. Jan 10 (2014).

38. **Marchetto MC**, Gage FH. Your brain under the microscope: the promise of stem cells. *Cerebrum*. 2014 Jan 1;2014:1. eCollection, Jan (2014).

37. **Marchetto MC**, Narvaiza I, Denli AM, Benner C, Lazzarini TA, Nathanson JL, Paquola ACM, Desai KN, Herai RH, Weitzman MD, Yeo GW, Muotri AR, Gage FH. Differential L1 regulation in pluripotent stem cells of humans and apes. *Nature.* Nov 28; 503(7477):525-9 (2013).

36. Hrvoj-Mihic B, **Marchetto MC**, Gage FH, Semendeferi K, Muotri AR. Novel Tools, Classic Techniques:

Evolutionary Studies Using Primate Pluripotent Stem Cells. *Biol Psychiatry*. Sep 13. [Epub ahead of print]. (2013).

35. Tang X, Zhou L, Wagner AM, **Marchetto MC**, Muotri AR, Gage FH, Chen G. Astroglial cells regulate the developmental timeline of human neurons differentiated from induced pluripotent stem cells. *Stem Cell Res*. Sep;11(2):743-57 (2013).

34. Yu DX, **Marchetto MC**, Gage FH. Therapeutic translation of iPSCs for treating neurological disease. *Cell Stem Cell*. Jun 6;12(6):678-88 (2013).

32. Liang Y, Franks TM, **Marchetto MC**, Gage FH, Hetzer MW. Dynamic association of NUP98 with the human genome. *PLoS Genet*. Feb;9(2):e1003308 (2013).

31. Bellin M, **Marchetto MC**, Gage FH, Mummery CL. Induced pluripotent stem cell: the new patient? *Nat Rev Mol Cell Biol*. 2012 Nov;13(11):713-26.

30. Rocha CR, Lerner LK, Okamoto OK, **Marchetto MC**, Menck CF. The role of DNA repair in the pluripotency and differentiation of human stem cells. *Mutat Res*. Jan-Mar;752(1):25-35 (2013).

29. Egawa N, Kitaoka S, Tsukita K, Naitoh M, Takahashi K, Yamamoto T, Adachi F, Kondo T, Okita K, Asaka I, Aoi T, Watanabe A, Yamada Y, Morizane A, Takahashi J, Ayaki T, Ito H, Yoshikawa K, Yamawaki S, Suzuki S, Watanabe D, Hioki H, Kaneko T, Makioka K, Okamoto K, Takuma H, Tamaoka A, Hasegawa K, Nonaka T, Hasegawa M, Kawata A, Yoshida M, Nakahata T, Takahashi R, **Marchetto MC**, Gage FH, Yamanaka S, Inoue H. Drug Screening for ALS Using Patient-Specific Induced Pluripotent Stem Cells. *Sci Transl Med*. Aug 1;4(145):145ra104 (2012).

28. Giorgetti A, **Marchetto MC**, Li M, Yu D, Fazzina R, Mu Y, Adamo A, Paramonov I, Cardoso JC, Monasterio MB, Bardy C, Cassiani-Ingoni R, Liu GH, Gage FH, Izpisua Belmonte JC. Cord blood-derived neuronal cells by ectopic expression of Sox2 and c-Myc. *Proc Natl Acad Sci U S A*. Jul 31;109(31):12556-61 (2012).

27. **Marchetto MC**, Gage FH. Modeling brain disease in a dish: really? *Cell Stem Cell*. Jun 14;10(6):642-5 (2012).

26. Coufal NG, Garcia-Perez JL, Peng GE, **Marchetto MC**, Muotri AR, Mu Y, Carson CT, Macia A, Moran JV, Gage FH. Ataxia telangiectasia mutated (ATM) modulates long interspersed element-1 (L1) retrotransposition in human neural stem cells. *Proc Natl Acad Sci U S A*. Dec 20;108(51):20382-7 (2011).

25. **Marchetto MC**, Brennand KJ, Boyer LF, Gage FH. Induced pluripotent stem cells (iPSCs) and neurological disease modeling: progress and promises. *Hum Mol Genet*. Oct 15;20(R2):R109-15 (2011).

24. Mitne-Neto M, Machado-Costa M, **Marchetto MC**, Bengtson MH, Joazeiro CA, Tsuda H, Bellen HJ, Silva HC, Oliveira AS, Lazar M, Muotri AR, Zatz M. Downregulation of VAPB expression in motor neurons derived from induced pluripotent stem cells of ALS8 patients. *Hum Mol Genet*. Sep 15;20(18):3642-52 (2011).

23. Muotri AR, **Marchetto MC**, Coufal NG, Oefner R, Yeo G, Nakashima K, Gage FH. L1 retrotransposition in neurons is modulated by MeCP2. *Nature*. Nov 18;468(7322):443-6 (2010).

22. **Marchetto MC**, Carromeu C, Acab A, Yu D, Yeo GW, Mu Y, Chen G, Gage FH, Muotri AR. A model for neural development and treatment of Rett syndrome using human induced pluripotent stem cells. *Cell*. Nov 12; 143(4):527-39 (2010).

21. Ma DK, **Marchetto MC**, Guo JU, Ming GL, Gage FH, Song H. Epigenetic choreographers of neurogenesis in the adult mammalian brain. *Nat Neurosci*. Nov 13(11):1338-44 (2010).

20. Singer T, McConnell MJ, **Marchetto MC**, Coufal NG, Gage FH.LINE-1 retrotransposons: mediators of somatic variation in neuronal genomes? *Trends Neurosci*. Aug 33(8):345-54 (2010).

19. **Marchetto MC**, Winner B, Gage FH. Pluripotent stem cells in neurodegenerative and neurodevelopmental diseases. *Hum Mol Genet*. Apr 15;19(R1):R71-6 (2010).

18. Glass CK, Saijo K, Winner B, **Marchetto MC**, Gage FH. Mechanisms underlying inflammation in neurodegeneration. *Cell*. Mar 19;140(6):918-34 (2010).

17. Muotri AR, Zhao C, **Marchetto MC**, Gage FH. Environmental influence on L1 retrotransposons in the adult hippocampus. *Hippocampus*. 2009 Oct;19(10):1002-7 (2009).

16. **Marchetto MC**, Yeo GW, Kainohana O, Marsala M, Gage FH, Muotri AR. Transcriptional signature and memory retention of human-induced pluripotent stem cells. *PLoS One*. Sep 18;4(9):e7076 (2009).

15. Leite R.A., **Marchetto M.C.**, Muotri A.R., Vasconcelos D.de M., de Oliveira Z.N., Machado M.C., Menck C.F. Identification of XP complementation groups by recombinant adenovirus carrying DNA repair genes. *J Invest Dermatol*. 129(2):502-6 (2009).

14. **Marchetto, M. C.**, Muotri, A. R., Mu, Y., Smith, A. M., Cezar, G.G. & Gage, F.H. Non-cell-autonomous effect of human $SOD1^{G37R}$ Astrocytes on motor neurons derived from human embryonic stem cells. *Cell Stem Cell*. 4;3(6):649-57 (2008).

13. Yeo G.W., Coufal N, Aigner S, Winner B, Scolnick J.A., **Marchetto M.C.**, Muotri A.R., Carson C, Gage F.H. Multiple Layers of molecular controls modulate self-renewal and neuronal lineage specification of embryonic stem cells. *Hum Mol Genet*. Apr 15;17(R1):R67-75 (2008).

12. Armelini, M. G., Lima-Bessa, K., **Marchetto, M. C.**, Muotri, A. R., Chigancas, V., Leite, R., Carvalho, H. & Menck, C. F. M. Exploring DNA damage response with recombinant adenovirus. *Hum Exp Toxicology.* 26: 899-06 (2007).

11. Muotri, A. R., **Marchetto, M. C.**, Coufal, N. & Gage, F. H. The necessary junk – new functions for transposable elements. *Hum Mol Genet.* 16, 159-67 (2007).

10. Garcia-Perez, J. L., **Marchetto, M. C.**, Muotri, A. R., Coufal, N., Gage, F. H., Sue O'Shea, K. & Moran, J. V. LINE-1 retrotransposition in human embryonic stem cells. *Hum Mol Genet.* 16, 1569-77 (2007).

9. **Marchetto, M. C.**, Correa, R. G., Menck, C. F. & Muotri, A. R. Functional lentiviral vectors for xeroderma pigmentosum gene therapy. *J Biotechnol.* 4, 424-30 (2006).

8. Muotri, A. R., Chu, V. T., **Marchetto, M. C.**, Deng, W., Moran, J. V. & Gage, F. H. Somatic mosaicism in neuronal precursor cells mediated by L1 retrotransposition. *Nature.* 435, 903-10 (2005).

7. Armelini, M. G., Muotri, A. R., **Marchetto, M. C.**, de Lima-Bessa, K. M., Sarasin, A. & Menck, C. F. M. Restoring DNA repair capacity of cells from three distinct diseases by XPD gene-recombinant adenovirus. *Cancer Gene Ther.* 12, 389-96 (2005).

6. **Marchetto, M. C.**, Muotri, A. R., Burns, D. K., Friedberg, E. C. & Menck, C. F. Gene transduction in skin cells: preventing cancer in xeroderma pigmentosum mice. *Proc Natl Acad Sci U S A*. 101, 17759-64 (2004).

5. Muotri, A. R., **Marchetto, M. C.**, Zerbini, L. F., Libermann, T. A., Ventura, A. M., Sarasin, A. & Menck, C. F. M. Complementation of the DNA repair deficiency in human xeroderma pigmentosum group A and C cells by recombinant adenovirus-mediated gene transfer. *Hum Gene Ther.* 13, 1833-44 (2002).

4. Muotri, A. R., **Marchetto, M. C.**, Suzuki, M. F., Okazaki, K., Lotfi, C. F., Brumatti, G., Amarante-Mendes, G. P. & Menck, C. F. M. Low amounts of the DNA repair XPA protein are sufficient to recover UV-resistance. *Carcinogenesis* 23, 1039-46 (2002).

3. Magalhaes, G. S., Muotri, A. R., **Marchetto, M. C**., Menck, C. F. & Ventura, A. M. An adenovirus vector containing the suicide gene thymidine kinase for a broad application in cancer gene therapy. *Mem Inst Oswaldo Cruz*. 97, 547-52 (2002).

2. **Marchetto, M. C.**, Muotri, A. R., Zerbini, L. C., Liebermann, T., Ventura, A. & Menck, C. F. M. The EGFP recombinant adenovirus: an example for efficient gene delivery and expression in human cells. *Virus Rev Res.* 6, 23-33 (2001).

1. Fernandes-Matioli F.M.C., **Marchetto M.C.**, Almeida-Toledo L.F., Toledo-Filho, S.A. High intraspecific karyological conservation in four species of *Gymnotus* (Pisces: Gymnotiformes) from Southeastern Brazilian basins. *Caryologia.* 51: 221-234 (1998).

**Outreach Activities**

| | |
|---|---|
| **2017** | Volunteer tutor at Monarch School for homeless students, San Diego. |
| **2016-2020** | Lecturer: "Understanding the Brain" for yoga teacher training program, House of Yogi, San Diego |
| **2014** | Volunteer for University of California San Diego Multiple Sclerosis Center |
| **2011** | Back to the Basics Lectures Series at the Salk Institute: "Using stem cells to model neurological disorders" |

**2011-2015** Group Speaker at High School Science Day at the Salk Institute: March of Dimes.
**2010-2020** Member of the Salk Institute Ambassador Program: provide guidance to international postdocs

**Invited Oral Presentations**

**Marchetto, MC,** "Using Stem Cells to study Human Origins". Invited speaker on Center for Academic Research and Training in anthropology public Symposium on "*Imagining the Future of Anthropogeny*". La Jolla, CA. November 19-20, 2022.
**Marchetto, MC,** "LINE1 Retrotransposons". Invited Speaker for the Center for Academic Research and Training in anthropology public Symposium on "*Comparative Anthropogeny: From Molecules to Societies*". La Jolla, CA. October, 16-17, 2021.
**Marchetto MC, "**Studying Macrocephalic Autism Using Induced Pluripotent Stem Cells". Invited speaker at 2019 Molecular Psychiatry Association Meeting. San Francisco, CA. October 17-20, 2019.
**Marchetto MC,** Invited to participate on "The Brainstorm Organoid Project Working Group" to discuss ethical issues in brain organoid research, Harvard University, Boston, MA. July 26-27, 2019.
**Marchetto MC,** "Using Stem Cell Models to Study Psychiatric Conditions: Update on Gene Editing Tools, Single Cell Transcriptomics, and Drug Responsiveness", Invited chair, for the small symposium presented during the American Psychiatric Association Annual Meeting. San Francisco, CA. May 18-22, 2019
**Marchetto MC,** "Using stem cell models to study mood disorders and neuroinflammation". Invited speaker at the Fer à Moulin Institute (IFM / Inserm / Sorbonne University) Seminar Series. Paris, France. April 9, 2019.
**Marchetto MC,** "Using stem cell models to study bipolar disorders and neuroinflammation". Invited speaker at the Psychiatry and Neuroscience Seminar Series 2019. Institute of Psychiatry and Neuroscience of Paris. Paris, France. April 5, 2019.
**Marchetto MC,** "Using stem cell models to study bipolar disorder and neuroinflammation" Invited Speaker for Distinguished Lecture for the 2018-19 Collaborative Program in Neuroscience / Krembil Seminar Series, University of Toronto, ON, Canada. Feb 8, 2019.
**Marchetto MC**, "Using stem cell models to study Bipolar Disorder and neuroinflammation" Invited speaker for the Cell & Gene Meeting on the Mesa, Scientific Symposium, La Jolla, October 5, 2018.
**Marchetto MC**, "Using patient-derived neural cells to study Bipolar Disorder" Invited speaker for the 6th Annual Molecular Psychiatry Meeting, Kauai, September 27-29, 2018.
**Marchetto MC**, "Using pluripotent stem cell models to study neuronflammation in Bipolar Disorder" Invited speaker for the iPSC Models in Neuroscience, SAHMRI, Adelaide, Australia, June 19, 2018.
**Marchetto MC**, "Using pluripotent stem cell models to study neuropsychiatric conditions" Invited speaker for the Stem Cells in Disease Modeling and Drug Discovery Conference. Monash Institute of Pharmaceutical Sciences, Melbourne, Australia. June 17-18, 2018.
**Marchetto MC**, "Studying ASD using iPSC models" Invited speaker for the 2018 Translational Psychiatry Meeting, Park City, UT. February, 2018.
**Marchetto MC**, "iPSCs: Disease Models I". Invited Chair for the Nanosymposium at Society for Neuroscience (SFN). Washington, DC. November, 2017.
**Marchetto MC**, **"**Modeling autism using pluripotent stem cells" Invited speaker for the 5th Annual Molecular Psychiatry Meeting. San Francisco, CA. October, 2017.
**Marchetto MC, "**Modeling autism using pluripotent stem cells". Hussman Institute for Autism, Baltimore, MD. October, 2017.
**Marchetto MC**, "Modeling drug response in autism using pluripotent stem cells". Invited speaker for the Nanosymposium: "Modeling Neuropsychiatric Disease" at the Society for Neuroscience Meeting in San Diego, CA. November, 2016.
**Marchetto MC**, "Modeling autism using pluripotent stem cells". Invited speaker for the 4th Annual Molecular Psychiatry Meeting. Maui, Hawaii. October, 2016.
**Marchetto MC**, "Modeling Neural Phenotype in Autism". Invited Speaker: "Stem Cells and Regeneration Seminar Series" at University of Virginia School of Medicine, Charlottesville, VA. March, 2016.
**Marchetto MC**, "Probing Neural Phenotype in Macrocephalic Autism". Invited Speaker for the Session: "Genomes and Cells: New Models for Target Discovery and Validation" *at the* 54th Annual Meeting of the American College of Neuropsychopharmacology (ACNP). Hollywood, FL. December, 2015.
**Marchetto MC**, "Modeling autism using human neurons in the dish". Invited Keynote speaker on the 1st International Symposium on Practices for the Treatment of Autism at Universidad Autonoma de Baja California, Tijuana, Mexico. November, 2015.

**Marchetto MC**, “Harnessing the Power of Glia and Stem Cells”, Invited Moderator for Press Conference: at the 45th Annual Meeting of the Society for Neuroscience (SFN). Chicago, IL. October, 2015.
**Marchetto MC**, "Advancing neuroscience: functional insights from *in vitro* microelectrode arrays: “Probing Neural Phenotype in Autism and Other Neuropsychiatric Diseases". Invited speaker at the public Webinar hosted by Labroots and Axion Biosystems. San Diego, CA. October 7, 2015.
**Marchetto MC**, “Modeling human complex neurological disorders using neural cells”. Invited speaker at the Meeting “Creating Patient-specific Neural Cells for the In Vitro Study of Brain Disorders” Banbury Center, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY. April 14-17, 2015.
**Marchetto MC**, “News and views: human iPSC derived neuronal models”. Invited speaker at the Interdisciplinary Center for Clinical Research, at Friedrich-Alexander University Erlangen-Nurnberg, Germany. March, 2015.
**Marchetto MC**, “Using human neural cells to model for autism spectrum disorders with accelerated brain growth”. Invited speaker for the symposium “S34: Modeling evolution, neuronal development and neurodegenerative disorders using mammalian induced pluripotent stem cells” at the 11th Gottingen Meeting of the German Neuroscience Society, University of Gottingen, Gottingen, Germany. March 2015.
**Marchetto MC**, “Differential L1 regulation in pluripotent stem cells of humans and apes”. Invited speaker for the Session of Stem Cell Modeling at the II Advanced Topics in Genomics and Cell Biology (ATGC 2014), CEBEMEG, University of Campinas (UNICAMP), Campinas, Brazil**.** August 4-6, 2014.
**Marchetto MC**, “Using induced pluripotent stem cells (iPSC) to model for autism spectrum disorders”. Invited speaker at the 4th Annual World Congress of Molecular & Cell Biology (CMCB-2014), Dalian, China. April, 2014.
**Marchetto MC**, “Probing evolution in a dish using neural cells from humans and chimpanzees”. Invited speaker at the 3rd Kavli Community Symposium, Trondheim, Norway. August 22-23, 2013.
**Marchetto MC**, “Differential LINE-1 retrotransposition in induced pluripotent stem cells between humans and great apes”. Invited speaker at the Banbury Center, Cold Spring Harbor, NY. Symposia on Transposable Elements in the Brain and Other Tissues: Prevalence and Function. Cold Spring Harbor, NY. March, 2013.
**Marchetto MC**, “Control of L1 retrotransposition in the brain”. Invited speaker at First Congress of Evolutionary Biology, sponsored by the European Society of Evolutionary Biology (ESEB). Symposia on Influential Symbionts: Master manipulators of adaptive host behavior. Ottawa, Canada. July 7-11, 2012.
**Marchetto MC**, “Using Induced Pluripotent Stem Cells as an Evolutionary Tool”. Invited speaker at the Max-Planck-Institute of evolutionary Anthropology. Leipzig, Germany November 1, 2011.
**Marchetto MC**, “Modeling Autism Spectrum Disorders Using Pluripotent Stem Cells”. Invited speaker to the Third Meeting of the BMBF (Bundesministerium fur Bildung und Forschung) Neuroscience Groups. Max Plank Institute for Chemical Ecology. Jena, Germany. November 3-4, 2011.
**Marchetto MC**, “Modeling Rett Syndrome Using Induced Pluripotent Stem Cells”. Salk Featured Fellow Series, Salk Institute, La Jolla, CA. March 2, 2011.
**Marchetto MC**, “Insights on Primate Evolution Using Induced Pluripotent Stem Cells (iPSC)”. Invited speaker to Session: “ESCs, Induced Pluripotent Cells (iPSC), and their Potential Applications” at Stem Cells World Congress, San Diego, CA. January 24-25, 2011.
**Marchetto MC**, “Stem Cells and Spinal Cord Injury”. Invited speaker for Chalk Talk: 4th Christopher and Dana Reeve Foundation Spinal Cord Symposium: Bench-to-Bedside. Chandler, AZ. December 2010.
**Marchetto MC**, “Primate evolution using induced pluripotent stem cells (iPSC)”. Invited speaker to the 7th Annual Christopher Reeve “Hot Topics” in Stem Cell Biology. San Diego, CA. November 15, 2010.
**Marchetto MC**, “Modulation of LINE1 retrotransposition during mammalian neurogenesis”. Invited speaker to the Minisymposium: Genomic and Epigenomic Diversity of Brain DNA: What Is It for? Society for Neuroscience Meeting (SFN) San Diego, CA. November 14, 2010.
**Marchetto MC**, “Modeling ALS with human ES cells” – XXXIV Annual Brazilian Conference on Neuroscience and Behavior - SBNeC – Caxambu, MG, Brazil. September 8-9, 2010.
**Marchetto MC**, “Modeling ALS using human stem cells”. California ALS Research Summit, San Francisco, CA. June 27-28, 2010.
**Marchetto MC**, “Using human pluripotent stem cells to study neural development and diseases”. Minisymposium 491 at Society for Neuroscience Meeting (SFN) Chicago, IL. October, 2009.

# Salk Adjunct Service/Contributions Form

**Name:** Maria Carolina Marchetto **Appointment Start Date:**
**Sponsors:** Rusty Gage, Nicola Allen ar

To be eligible for appointment and reappointment in the Adjunct series, appointees are expected to be engaged in **at least two** Institute-related activities outlined below. If you are being considered for your first Adjunct Professor appointment, provide information about your plans to engage in the Salk community and select any of the activities you would be interested in below. If you are being considered for reappointment, select your ongoing activities and give a brief summary of your engagement in each activity during the past appointment period. Also provide a summary of your plans to engage in the Salk activities during the next appointment period.

**Salk Activities (list the course/seminar titles, committees, and student names if known)**
** Please note research collaborations with a Salk Faculty sponsor(s) do not qualify as Institute-related activities expected for an Adjunct position*

- ☒ Giving Seminars, such as those hosted by Sponsors or by the Institute
- ☒ Teaching in Salk-organized courses
- ☒ Serving on UCSD Student Review committees and/or Thesis Committees in Salk Labs
- ☐ Reviewing Postdoctoral and other Internal Grants
- ☐ Participating in Salk's outreach and educational efforts to recruit underrepresented minority student applicants
- ☒ Consulting on Salk scientific initiatives or multi-PI grants
- ☒ Serving on Faculty Review Committees
- ☐ Promoting award and nomination opportunities for Salk Faculty
- ☒ Organizing or participating on Salk Meetings or Conferences
- ☒ Other

**Salk Service Summary & Plans:** Describe your plans to engage in the activities marked above during the next appointment period (i.e.: Salk Course or Seminar Titles, names of Student or Faculty review committee, description of contributions to grants, etc. if unable to fit above). If you are being considered for reappointment, also describe your engagement in the Salk activities during the last appointment period. You may attach a supplemental letter with these activities as needed.

I am involved in the Salk community and plan to continue my involvement in the the following areas:
-Mentoring: I have a passion for mentoring and I actively participate in mentoring undergraduate and graduate students at UCSD and Salk. For example, I currently co-mentor two PhD students with Rusty in the Gage lab (Sarah Fernandes_UCSD Biology and Sheila C Steiner_UCSD Neuroscience) and I am on a PhD committee thesis for a student doing his PhD research at the Salk (Kenneth David Kuhn, UCSD, Neuroscience).

-Scientific Initiatives: I participate on AHA-Allen Initiative and help advising as well as providing resources involving human and nonhuman primate cell culture to other Salk PIs that are part of the Initiative (ex. Gerry Shadel, Joe Ecker, John Reynolds, Nicola Allen ad others). I am also planing to provide stem cell culture and neuronal differentiation advice to the Salk Stem Core during the restructuring phase of the core. I will continue to apply for NIH and private foundations grants with Salk PIs.

-Seminars at Salk: I have participated on several Salk seminar/ meetings over the years (Ex. CARTA, Stem Cell on the Mesa, Woman and Science). During the next appointment period I would be happy to continue participating on Salk seminars or organizing Salk Meetings/Courses.

-Faculty Review Committees: I am open and willing to participate on Faculty Review Committees, if invited.