

STEPHANIE A HERRLINGER, Ph.D.

Columbia University
Postdoctoral Research Scientist
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EDUCATION

Doctor of Philosophy
Received Fall 2018

University of Georgia; Mentor: Dr. Jian-Fu (Jeff) Chen
Neuroscience, Biomedical and Health Sciences Institute
Dissertation: Beyond the Undergrowth: Causes of Neural Tube Defects and Microcephaly

Bachelor of Science
Received Spring 2010

University of Rochester; Mentor: Dr. Steven Goldman
Molecular Genetics, Department of Biology
Distinction in Research. Thesis title: Brain Gene Therapy

RESEARCH POSITIONS

02/2019 – current
Columbia University

Postdoctoral Mentors: **Dr. Joseph Gogos and Dr. Attila Losonczy**
Focus: Correlating physiology and transcription during learning in a model for the 22q11.2 deletion

08/2013 – 12/2018
University of Georgia,
University of Southern California

Doctoral Mentor: **Dr. Jian-Fu (Jeff) Chen**
Focus: 1) ZIKV-induced microcephaly 2) Post-transcriptional regulation of neurodevelopment by RNA-binding protein Lin28

05/2010 – 06/2013
University of Rochester
Research Associate

Research Mentors: **Dr. Steven Goldman & Dr. Abdellatif Benraiss**
Focus: Glial contributions to Huntington's Disease

05/2008 – 05/2010
University of Rochester

Principal Investigator: **Dr. Steven Goldman**
Focus: Brain gene therapy as endogenous therapy for Huntington's Disease.
Undergraduate Thesis

08/2007 – 05/2008
University of Rochester

Principal Investigator: **Dr. Richard Glor**
Independent study: Ecological and Niche Modeling of *Anolis segrei* in Cuba
Undergraduate Research Project

05/2006 – 08/2007
Innovative Biotherapies Inc.
Ann Arbor, Michigan

Lead Scientist: **Dr. David Humes** (University of Michigan)
Focus: Cell culture and efficacy of kidney cells for large scale animal trials.
Lab Technician

05/2004 – 08/2004
University of Michigan

Principal Investigator: **Dr. James Shayman**
Focus: Management of immune deficient mouse colony.
Lab Technician

PUBLICATIONS

- (9) **Stephanie Herrlinger***, Qiang Shao*, Mei Yang, Gustavo Martinez, Yang Liu, Xiaohan Pan, Hang Yin, Li-Wei Xie, Jian-Fu Chen. (2019) Lin28-mediated promotion of translation is critical for neural progenitor cell maintenance and brain development in mice. *Development*, 10.1242/dev.173765. * **co-first authorship**

- (8) Wei Zhang, Si-Lu Yang, Mei Yang, **Stephanie Herrlinger**, Qiang Shao, John L. Collar, Edgar Fierro, Yanhong Shi, Aimin Liu, Hui Lu, Bruce E. Herring, Ming-Lei Guo, Shilpa Buch, Zhen Zhao, Jian Xu, Zhipeng Lu, Jian-Fu Chen. (2019) Modeling microcephaly with cerebral organoids reveals a WDR62–CEP170–KIF2A pathway promoting cilium disassembly in neural progenitors. *Nature Communications*, 10.1038/s41467-019-10497-2.
- (7) **Stephanie Herrlinger**, Qiang Shao, Li Ma, Yanan Zhu, Melinda A. Brindley, and Jian-Fu Chen. Establishing mouse models for Zika virus-induced neurological disorders using intracerebral injection strategies: embryonic, neonatal, and adult. (2018) *Journal of Visualized Experiments (JoVE)*, 10.3791/56486.
- (6) Qiang Shao*, **Stephanie Herrlinger***, Yanan Zhu, Mei Yang, Forrest Goodfellow, Xiao-Peng Qi, Fan Lai, Melinda A. Brindley, and Jian-Fu Chen. (2017) African Zika Virus is More Virulent and Causes More Severe Brain Damage with Postnatal Death Compared to Asian Lineage and Dengue Virus. *Development*, 10.1242/dev.156752. * **co-first authorship**
- (5) Qiang Shao*, **Stephanie Herrlinger***, Si-Lu Yang, Fan Lai, Julie M. Moore, Melinda A. Brindley, and Jian-Fu Chen. (2016) Zika virus infection disrupts neurovascular development and results in postnatal microcephaly with brain damage. *Development*, 143: 4127-4136. * **co-first authorship**
- (4) Mei Yang, Chen Liang, Kunchithapadam Swaminathan, **Stephanie Herrlinger**, Fan Lai, Ramin Shiekhata, and Jian-Fu Chen. (2016) A C9ORF72/SMCR8-containing complex regulates ULK1 and plays a dual role in autophagic flux. *Science Advances*, Vol. 2, no. 9, e1601167.
- (3) Benraiss, S. Wang, **S. Herrlinger**, X. Li, D. Chandler-Millitello, J. P. Mauceri, H. B. Burm, M. J. Toner, Q. Xu, F. Ding, F. Wang, N. Kang, J. Kang, M. S. Windrem, I. Munoz-SanJuan, M. Nedergaard, S. A. Goldman. (2016) Human glia can both induce and rescue aspects of disease phenotype in Huntington's disease. *Nature Communications*, 7:11758.
- (2) Si-Lu Yang, Mei Yang, **Stephanie Herrlinger**, Chen Liang, Fan Lai, and Jian-Fu Chen (2015). MiR-302/367 regulate neural progenitor proliferation, differentiation, and survival in neurulation. *Developmental Biology*, 408(1):140-50.
- (1) Mei Yang, Si-Lu Yang, **Stephanie Herrlinger**, Monika Dzieciatkowska, Kirk Hansen, Lee Niswander, Eric Moss, and Jian-Fu Chen (2015). Lin28 promotes the proliferative capacity of neural progenitor cells in brain development. *Development*, 142(9):1616-27.

AWARDS & FELLOWSHIPS

06/2018 \$200	<u>Best Pre-Doctoral Oral Presentation.</u> NEURAL conference, University of Alabama Roadmap Scholars, Birmingham, AL.
04/2018	<u>Best Pre-Doctoral Poster Award.</u> Herman Ostrow School of Dentistry Research Day 2018.
09/2017 \$294,292	<u>NIH Blueprint Diversity Specialized Predoctoral to Postdoctoral Advancement in Neuroscience (D-SPAN) Award (F99/K00).</u> National Institute of Mental Health (NIMH); Grant #: 1F99NS105187-01 Title: Correlating physiology and transcription during learning in a model for the 22q11.2 deletion.
09/2017 \$775	<u>Franklin Foundation Travel Award.</u> Purpose: Travel to Society for Neuroscience conference in Washington D. C.
08/2016 \$30,000	<u>Achievement Rewards for College Scientists (ARCS) Global Impact Award.</u> Purpose: Examine the effects of ZIKV on brain development and genetic causes of Microcephaly.
07/2015 \$27,000	<u>T32 Predoctoral Training Grant in Genetics.</u> National Institute of General Medical Sciences (Funding agency) Grant #: 2T32GM007103-42 Purpose: Examine the biological function of ALS/FTD associated gene C9orf72 <i>in vivo</i> .

07/2015	<u>Mary Erlanger Graduate Fellowship for Aging Research.</u>
\$2,500	
08/2013	<u>Scholars of Excellence Fellowship.</u> (Research assistantship)
\$19,000	
08/2013	<u>Foundation Graduate Fellowship.</u>
\$5,000	
08/2013	<u>EGRF Award.</u>
\$3,000	
01/2010	<u>Distinction in Research.</u> Undergraduate thesis title: Brain Gene Therapy
08/2008 – 05/2010	<u>Dean's List</u>

CONFERENCE PRESENTATIONS

Talks:

- (2) Lin28-mediated promotion of translation is critical for neural progenitor cell maintenance and brain development in mice. University of Alabama NEURAL conference. Birmingham, AL. (June 2018)
- (1) Translational Control of Neural Precursor Cell Behaviors in Neurodevelopment. University of Georgia Developmental Biology Retreat. Athens, GA. (April 2016)

Posters:

- (13) **Stephanie Herrlinger**, Francesco Brundu, Joseph Gogos, Attila Losonczy. Hippocampal single cell RNA sequencing in a model of 22q11.2 deletion syndrome (October 19 & 21, 2019). Poster was presented in two separate sessions at the Society for Neuroscience in Chicago, IL.
- (12) Haroon Arain, **Stephanie Herrlinger**, Joseph Gogos. Characterizing Interneuron Populations in the CA1 Region of Mice Modeling Schizophrenia (August 16, 2019). Poster was presented by my BRAINYAC student after his summer project was finished at the BRAINYAC Graduation & Poster Presentation at the Jerome L. Greene Science Center at Columbia.
- (11) **Stephanie Herrlinger**, Qiang Shao, Mei Yang, Gustavo Martinez, Yang Liu and Jian-Fu Chen. Lin28-mediated mRNA translation promotion is critical for neural progenitor cell behavior and brain development (April 4, 2018). Poster was presented at the Herman Ostrow School of Dentistry of USC Research Day in Los Angeles, CA.
- (10) **Stephanie Herrlinger**, Qiang Shao, Mei Yang, Gustavo Martinez, Yang Liu and Jian-Fu Chen. Lin28-mediated mRNA translation promotion is critical for neural progenitor cell behavior and brain development (November 10-15, 2017). Poster was presented at the Society for Neuroscience Conference in Washington D. C.
- (9) **Stephanie Herrlinger**, Mei Yang, Chen Liang, Kunchithapadam Swaminathan, Fan Lai, Ramin Shiekhhattar, and Jian-Fu Chen (July 23-27, 2017). A C9ORF72/SMCR8-containing complex regulates ULK1 and plays a dual role in autophagy. Poster was presented at the Gordon Research Conference Amyotrophic Lateral Sclerosis (ALS) & related Motor Neuron Diseases, Stowe, VT.
- (8) **Stephanie Herrlinger**, Hector Barreto, Aaron Alcala, Mike Choromanski, Karl Kudyba, and Jian-Fu Chen. (April 2017) Microcephaly associated gene *Wdr62*^{-/-} mice are infertile with severe testis malformation and abnormal germ cell differentiation. Poster was presented at the University of Georgia Developmental Biology Retreat. Athens, GA.
- (7) Mei Yang, Chen Liang, Kunchithapadam Swaminathan, **Stephanie Herrlinger**, Fan Lai, Ramin Shiekhhattar, and Jian-Fu Chen (Jan. 9-14, 2017). A C9ORF72/SMCR8-containing complex regulates ULK1 and

plays a dual role in autophagy. Poster was presented at the Wellcome Genome Campus Course in Molecular Neurodegeneration, Cambridge, UK.

- (6) **Stephanie Herrlinger**, Qiang Shao, Jian-Fu Chen. Dengue Virus infection in brain development causes Microcephaly that is less severe when compared with Zika Virus-induced Microcephaly. (October 2016) Poster presented at Annual Developmental Biology Symposium at the University of Georgia.
- (5) **Stephanie Herrlinger**, Qiang Shao, Jian-Fu Chen. Zika virus infection disrupts neurovascular development and results in postnatal microcephaly with brain damage. (August 2016) Poster presented at Annual Genetics Department Retreat at the University of Georgia, Athens, GA.
- (4) **Stephanie Herrlinger**, Qiang Shao, Gustavo A. Martínez-Muñiz, Jian-Fu Chen (May 2016). Translational Control of Neural Progenitor Cell Behaviors in Neurodevelopment. Poster was presented at the Southeast Regional Society for Developmental Biology Annual Meeting at the Whitney Laboratory, St. Augustine, FL.
- (3) Mei Yang, Si-Lu Yang, **Stephanie Herrlinger**, Monika Dzieciatkowska, Kirk Hansen, Lee Niswander, Eric Moss, and Jian-Fu Chen (September 2015). Lin28a and Lin28b play overlapping functions to temporally regulate embryonic neural stem cell proliferation and brain development. Poster presented at the Developmental Biology Symposium, Athens, GA.
- (2) Mei Yang, Si-Lu Yang, **Stephanie Herrlinger**, Monika Dzieciatkowska, Kirk Hansen, Lee Niswander, Eric Moss, and Jian-Fu Chen (July 2015). Lin28a and Lin28b play overlapping functions to temporally regulate embryonic neural stem cell proliferation and brain development. Poster presented at the 2015 Annual Society for Developmental Biology National Conference at Snowbird, Salt Lake City, UT.
- (1) S. Wang, **S. Herrlinger**, X. Li, A. Benraiss, M. S. Windrem, S. A. Goldman (2013). Striatal chimerization with hESC-derived glia expressing mutant huntingtin is sufficient to impair motor learning and coordination. Poster presented at the international 2013 Society for Neuroscience conference in San Diego, CA.

PROFESSIONAL MEMBERSHIPS AND EXPERIENCE

Member of the Society of Developmental Biology (2015-)

Member of the Society of Neuroscience (2010-)

Co-President of the Developmental Biology Graduate Student Association: I served an executive role on a graduate student-lead committee that organizes events for the developmental biology community at UGA. This past year we have founded the UGA Developmental Biology GSA and have planned, chose and invited speakers, and ran events such as the very successful Developmental Biology Symposium in the fall, the Developmental Biology Retreat in the spring, and recruitment events and new-student welcome events in the winter.

TEACHING

COLUMBIA UNIVERSITY

Mentorship: I have mentored a BRAINYAC high school student, and I am currently mentoring a graduate student in the labs of Dr. Gogos and Dr. Losonczy, where I am teaching him scRNA-seq, Patch-seq, and AOD imaging.

UNIVERSITY OF GEORGIA

Teaching Assistantship: For the undergraduate Neurobiology course, CBIO 3800, under professors Dr. James Lauderdale and Dr. Jian-Fu Chen. 2 years.

Graduate Lab Assistantship: I taught 3 2-hour sections of an undergraduate laboratory course per week in which I was the students' sole lecturer and instructor during the Fall of 2015.

Undergraduate Mentorship: I have mentored three CURO students during the school year in their independent research work in the laboratory of Dr. Jianfu Chen. In addition, I have mentored two SUNFIG student interns from Puerto Rico in the summers teaching them lab techniques and experimental design, and preparing them to present their own acquired data in a poster session and thesis by the end of the summer.

UNIVERSITY OF ROCHESTER

Undergraduate mentorship: I mentored numerous undergraduate students that were performing independent study credits or volunteers in the laboratory of Dr. Steven Goldman.

PROFESSIONAL COURSEWORK

Training Courses Attended:

Wellcome Genome Campus Course in Molecular Neurodegeneration: Jan. 9-14, 2017, in Cambridge, UK.
Neuroscience School of Advanced Studies (NSAS) course Single-Cell Omics: May 26-Jun. 1, 2019, in Venice, ITL.
Research Computing Bootcamp offered by the Foundations for Research Computing at Columbia: UNIX, Git, and Python: August, 2019, Columbia University, NYC.
