

**Curriculum Vitae WUSM Format**  
**Sheng Chih Jin, Ph.D., ScM**

**Date:** 02/9/2022

**Name** Jin, Sheng Chih

**Address, Telephone and email:**

Washington University School of Medicine  
Jin Lab, Department of Genetics  
660 South Euclid Avenue, Campus Box 8232  
St. Louis MO, 63110-1010  
Phone: (314) 273-2710  
Email: [jin810@wustl.edu](mailto:jin810@wustl.edu)

**Present Position:**

April 2020 – Present, Assistant Professor of Genetics and Pediatrics

**Education:**

National Chiao Tung University, Hsinchu, Taiwan, 2000 – 2004  
B.S., Applied Mathematics

Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA, 2006 – 2008  
ScM, Biostatistics

Washington University School of Medicine, St. Louis, MO, USA, 2010 – 2014  
Ph.D., Human & Statistical Genetics (Advisors: Alison Goate & Carlos Cruchaga)

Yale School of Medicine, New Haven, CT, USA, 2014 – 2018  
Postdoctoral Fellow (Advisor: Richard P. Lifton)

Rockefeller University, New York, NY, USA, 2018 – 2020  
Postdoctoral Fellow (Advisor: Richard P. Lifton)

**Academic Positions / Employment:**

2020 –	Assistant Professor of Genetics and Pediatrics Washington University School of Medicine
--------	--

### **Honors and Awards:**

- 2007 Cancer Research Training Award, Biostatistics Branch, Division of Cancer Epidemiology & Genetics, National Cancer Institute, NIH
- 2007 Departmental Scholarship, Department of Biostatistics, Johns Hopkins University
- 2011 Lucille P. Markey Special Emphasis Pathway in Human Pathobiology Fellowship, Markey Foundation, Washington University School of Medicine
- 2012 Alzheimer's Disease International Conference Travel Fellowship, Alzheimer's Association
- 2012 Best Oral Presentation Award, Human and Statistical Genetics Program 2012 Retreat
- 2014 Finalist, Fourth Annual Hope Center Retreat Poster Session, Hope Center for Neurological Disorders, Washington University School of Medicine
- 2014 Howard Hughes Medical Institute Postdoctoral Fellowship, Department of Genetics, Yale University School of Medicine
- 2015 James Hudson Brown – Alexander Brown Coxe Postdoctoral Fellowship in the Medical Sciences, Yale University School of Medicine
- 2018 American Heart Association Postdoctoral Fellowship
- 2019 NIH/NHLBI K99/R00 Pathway to Independence Award
- 2019 Postdoctoral Association Career Development Award, Rockefeller University
- 2020 Rockefeller University Nominee, Blavatnik Regional Award for Young Scientists
- 2021 Children's Discovery Institute Faculty Scholar, St. Louis Children's Hospital
- 2021 Hydrocephalus Association Innovator Award

### **Editorial Responsibilities:**

- 2013 – Ad hoc reviewer for BMC Neurology, Journal of Alzheimer's Disease, Molecular Neurodegeneration, Alzheimer's & Dementia, European Heart Journal, npj Genomic Medicine, Genes, Journal of Medical Genetics, Biomolecules
- 2013 – Review editor for Frontiers in Genetics, Neurogenomics Section

### **National Panels, Committees, Boards:**

N/A

### **Community Service Contributions:**

- **University Appointments and Committees**

2020 – DBBS Admissions Committee B, Washington University School of Medicine

- **Professional Societies and Organizations**

2011 – American Society of Human Genetics (Member)

2015 – American Heart Association (Member)

**Major Invited Professorships and Lectureships:**

2012	Alzheimer's Association International Conference (from submitted abstract), Vancouver, Canada
2014	Alzheimer's Association International Conference (from submitted abstract), Copenhagen, Denmark
2016	Institute of Biomedical Sciences, Academia Sinica, Taiwan
2017	NHLBI Bench to Bassinet Program Annual Face-to-Face Meeting, Rockville, MD
2017	Institute of Biomedical Sciences, Academia Sinica, Taiwan
2017	International Cerebral Palsy Genomics Consortium Conference (invited keynote presentation), Zhengzhou, China
2018	Department of Genetics, Washington University School of Medicine
2018	Eugene McDermott Center for Human Growth and Development, University of Texas Southwestern Medical Center
2018	Institute for Genomic Medicine, Nationwide Children's Hospital
2018	National Taiwan University College of Medical Institute of Medical Genomics and Proteomics
2019	Waisman Center, University of Wisconsin – Madison
2019	Mindich Child Health and Development Institute, Icahn School of Medicine at Mount Sinai
2019	International Cerebral Palsy Genomics Consortium Conference (invited presentation), Anaheim, CA
2020	American Society of Human Genetics (from submitted abstract), Virtual Meeting
2021	Mount Sinai x Open Box Science Computational Omics Seminar
2021	Washington University School of Medicine, Pediatric Neurology Research Working Group
2021	Washington University School of Medicine, Division of Genetics and Genomic Medicine
2021	Boston Taiwanese Biotechnology Association Monthly Seminar Series
2021	Washington University Department of Developmental Biology Seminar Series
2021	Washington University Department of Computer Science & Engineering Colloquia Series
2022	Washington University MSTP Future of Medicine Seminar

**Consulting Relationships and Board Memberships:**

N/A

### **Internal Review Work**

2021 Ad hoc reviewer for the Clinical and Translational Research Funding Program, Washington University Institute of Clinical and Translational Sciences

### **External Review Work**

N/A

### **Research Support:**

- **Governmental**

Title: Integrative Genomic Analysis of Congenital Heart Disease  
Agency: NIH/NHLBI 4R00HL143036-02  
Role: Principal Investigator  
Duration: 04/01/2020 – 03/31/2023  
Amount: \$249,005/year

Title: Human Genetics and Molecular Mechanisms of Congenital Hydrocephalus  
Agency: NIH/NINDS 1R01NS1111029-01A1  
Role: Co-Investigator  
Duration: 04/01/2020 – 01/31/2025  
Amount: \$41,678 (Year 2)

Title: Human Genetics and Molecular Mechanisms of Vein of Galen Malformation  
Agency: NIH/NINDS 1R01NS117609-01  
Role: Co-Investigator (Subaward to Yale University)  
Duration: 07/01/2020 – 06/30/2024  
Amount: \$11,907 (Year 2)

Title: Genetic Risk Factors for Severe Scoliosis  
Agency: NIH/NIAMS 2R01AR067715-06A1  
Role: Co-Investigator  
Duration: 07/01/2020 – 06/30/2024  
Amount: \$10,966 (Year 2)

- **Non-Governmental**

Title: A Genome-Wide Assessment of Noncoding Risk Variants in Congenital Hydrocephalus  
Agency: Hydrocephalus Association  
Role: Principal Investigator  
Duration: 12/31/2021 – 12/30/2022

Amount: \$50,000

Title: Human Genetics and Molecular Mechanisms of Cerebral Palsy  
 Agency: Children's Discovery Institute - St. Louis Children's Hospital  
 Role: Principal Investigator  
 Duration: 10/01/2021 – 09/30/2026  
 Amount: \$300,000

Title: Long-Read Genome Sequencing and Integrative Genomic Analysis for Cerebral Palsy  
 Agency: CTRFP - Washington University Institute of Clinical and Translational Sciences  
 Role: Principal Investigator  
 Duration: 03/01/2021 – 02/28/2022  
 Amount: \$50,000

Title: Functional characterization of the Diaph1 gene using the zebrafish knock model  
 Agency: Children's Discovery Institute - St. Louis Children's Hospital  
 Role: Principal Investigator  
 Duration: 02/05/2021 – 06/31/2022  
 Amount: \$10,000

#### Undergraduate Mentoring:

<b>Trainee</b>	<b>Period</b>	<b>Project Title</b>	<b>Support</b>	<b>Current Position</b>
Joshipura, Kareena	6/2021 – 8/2021	Human genetics of cerebral palsy	Mount Holyoke College's Lynk Fellowship	BS Student Mount Holyoke College
Wrubel, Max	11/2021 –	Human genetics of cerebral palsy	Post-Baccalaureate Extensive Study Program	MGI OGR Student

#### Graduate Mentoring:

<b>Trainee</b>	<b>Period</b>	<b>Project Title</b>	<b>Support</b>	<b>Current Position</b>
Zhao, Shujuan	9/2020 –	Human genetics and molecular mechanisms of Vein of Galen Malformation	1R01NS117609-01 + 4R00HL143036-02	PhD Candidate WUSTL

Peters, Samuel	5/2020 – 4/2021	Human genetics of primary Moyamoya disease	4R00HL143036-02	MS Student SLU
King, Spencer	5/2020 – 5/2021	Human genetics of cerebral palsy	4R00HL143036-02	Biomedical Informatics & Data Science Intern WUSTL I2
Yu, Xiaobing	2/2021 – 11/2021	Single-cell RNA-sequencing analysis for rare neurological disorders	4R00HL143036-02	MS Student WUSTL
Shaffiey, Shohaib	2/2021 – 5/2021	Whole genome sequencing analysis for rare neurological disorders	4R00HL143036-02	MS Student WUSTL

### Postgraduate Mentoring:

Trainee	Period	Project Title	Support	Current Position
Wang, Yung-Chun	6/2021 –	Human genetics of cerebral palsy	4R00HL143036-02	Postdoctoral Fellow

### Grants to Postdocs/Students:

Center of Regenerative Medicine Postdoctoral Fellowship  
 Title: Human genomics and molecular mechanisms of Sporadic Moyamoya disease  
 Agency: Washington University Center of Regenerative Medicine  
 Postdoc(s)/Student(s): Yung-Chun (David) Wang  
 Role: Sponsor  
 Duration: 07/01/2021  
 Amount: \$10,000 (signing bonus)

NIH TL1 Predoctoral Clinical Research Training Fellowship (Declined)  
 Title: Integrative Genomic Analysis of Cerebral Palsy and Rare Pediatric Movement Disorders  
 Agency: Washington University Clinical Research Training Center  
 Postdoc(s)/Student(s): Amar Sheth  
 Role: Sponsor  
 Duration: 06/01/2021 – 05/31/2022

Amount: \$2,110/month

### Thesis Committee Advisees:

Ciyang Wang	DBBS Molecular Genetics and Genomics
Chengran Yang	DBBS Human and Statistical Genetics
Tong Wu	Biomedical Engineering

### Qualifying Exam Committee:

Ji-Sun Kwon	DBBS Computational and Systems Biology
Evelyn Craigen	DBBS Molecular Genetics and Genomics (Chair)

### Patents:

N/A

### Teaching Responsibilities:

2021 – Lecturer, Bio5488: Genomics, Washington University School of Medicine  
 2021 – Study Section Co-Leader, Bio5491: Advanced Genetics, Washington University School of Medicine

### Bibliography:

- **Peer Reviewed Manuscripts (\* Equal contribution; # Co-corresponding; Lab members in bold)**
1. Caporaso N\*, Gu F\*, Chatterjee N\*, **Jin SC**, Yu K, Yeager M, Chen C, Jacobs K, Wheeler W, Landi MT, Ziegler RG, Hunter DJ, Chanock S, Hankinson S, Kraft P, Bergen AW. (2009). Genome-wide and candidate gene association study of cigarette smoking behavior. *PLoS ONE*, 4(2):e4653.
  2. Beaty TH, Murray JC, Marazita ML, Munger RG, Ruczinski I, Hetmanski JB, Liang KY, Wu T, Murray T, Fallin MD, Redett RA, Raymond G, Schwender H, **Jin SC**, Cooper ME, Dunnwald M, Mansilla MA, Leslie E, Bullard S, Lidral AC, Moreno LM, Menezes R, Vieira AR, Petrin A, Wilcox AJ, Lie RT, Jabs EW, Wu-Chou YH, Chen PK, Wang H, Ye X, Huang S, Yeow V, Chong SS, Jee SH, Shi B, Christensen K, Melbye M, Doheny KF, Pugh EW, Ling H, Castilla EE, Czeizel AE, Ma L, Field LL, Brody L, Pangilinan F, Mills JL, Molloy AM, Kirke PN, Scott JM, Arcos-Burgos M, Scott AF. (2010). A genome-wide association study of cleft lip with and without cleft palate identifies risk variants near MAFB and ABCA4. *Nature Genetics*, 42(6):525-529.
  3. Beaty TH, Ruczinski I, Murray JC, Marazita ML, Munger RG, Hetmanski JB, Murray T, Redett RJ, Fallin MD, Liang KY, Wu T, Patel PJ, **Jin SC**, Zhang TX, Schwender H, Wu-Chou YH, Chen PK, Chong SS, Cheah F, Yeow V, Ye X, Wang H, Huang S, Jabs EW, Shi B, Wilcox AJ, Lie RT, Jee SH, Christensen K, Doheny KF, Pugh EW, Ling H, Scott AF.

- (2011). Evidence for gene-environment interaction in a genome wide study of isolated, nonsyndromic cleft palate. *Genetic Epidemiology*, 35(6):469-478.
4. **Jin SC**, Pastor P, Cooper B, Cervantes S, Benitez BA, Razquin C, Goate AM, Ibero-American Alzheimer's Disease Genetics Group Researchers, Cruchaga C. (2012). Poole-DNA sequencing identifies novel causative variants in *PSEN1*, *GRN*, and *MAPT* in a clinical early-onset and familial Alzheimer's disease Ibero-American cohort. *Alzheimer's Research & Therapy*. 4(4):34.
  5. Wang H, Zhang T, Wu T, Hetmanski JB, Ruczinski I, Schwender H, Murray T, Fallin MD, Redett RJ, Raymond GV, **Jin SC**, Wu-Chou YH, Chen PK, Yeow V, Chong SS, Cheah FS, Jee SH, Jabs EW, Liang KY, Scott A, Beaty TH. (2013). The FGF&FGFR gene family and risk of cleft lip with or without cleft palate. *The Cleft Palate-Craniofacial Journal*, 50(1):96-103.
  6. Patel PJ, Beaty TH, Ruczinski I, Murray JC, Marazita ML, Munger RG, Hetmanski JB, Wu T, Murray T, Rose M, Redett RJ, **Jin SC**, Lie RT, Su-Chou YH, Wang H, Ye X, Yeow V, Chong S, Jee SH, Shi B, Scott AF. (2013). X-linked Markers in the Duchenne Muscular Dystrophy Gene Associated with Oral Clefts. *European Journal of Oral Sciences*, 121(2): 63-68.
  7. Benitez BA, Cooper B, Pastor P, **Jin SC**, Lorenzo E, Cervantes S, Cruchaga C. (2013). TERM2 is associated with the risk of Alzheimer's disease in Spanish population. *Neurobiology of Aging*, 34(6): 1711.e15-1711.e17.
  8. Benitez BA, Karch CM, Cai Y, **Jin SC**, Cooper B, Carrell D, Bertelsen S, Chibnik L, Schneider JA, Bennett DA; Alzheimer's Disease Neuroimaging Initiative; Genetic and Environmental Risk for Alzheimer's Disease Consortium, Fagan AM, Holtzman DM, Morris JC, Goate AM, Cruchaga C. (2013). The PSEN1, p.E318G variant increases the risk of Alzheimer's disease in APOE- $\epsilon$ 4 carriers. *PLoS Genetics*, 9(8): e1003685.
  9. Cruchaga C\*, Kauwe JS\*, Harari O, **Jin SC**, Cai Y, Karch CM, Benitez BA, Jeng AT, Skorupa T, Carrell D, Bertelsen S, Bailey M, McKean D, Shulman JM, De Jager PL, Chibnik L, Bennett DA, Arnold SE, Harold D, Sims R, Gerrish A, Williams J, Van Deerlin VM, Lee VM, Shaw LM, Trojanowski JQ, Haines JL, Mayeux R, Pericak-Vance MA, Farrer LA, Schellenberg GD, Peskind ER, Galasko D, Fagan AM, Holtzman DM, Morris JC; GERAD Consortium; Alzheimer's Disease Neuroimaging Initiative Alzheimer's Disease Genetic Consortium, Goate AM. (2013). GWAS of cerebrospinal fluid tau levels identifies risk variants for Alzheimer's disease. *Neuron*, 78(2):256-268.
  10. Benitez BA\*, **Jin SC\***, Guerreiro R, Graham R, Lord J, Harold D, Sims R, Lambert JC, Gibbs JR, Bras J, Sassi C, Harari O, Bertelsen S, Lupton MK, Powell J, Bellenguez C, Brown K, Medway C, Haddick PC, van der Brug MP, Bhangale T, Ortmann W, Behrens T, Mayeux R, Pericak-Vance MA, Farrer LA, Schellenberg GD, Haines JL, Turton J, Braae A, Barber I, Fagan AM, Holtzman DM, Morris JC; 3C Study Group; EADI consortium; Alzheimer's Disease Genetic Consortium; Alzheimer's Disease Neuroimaging Initiative; GERAD Consortium, Williams J, Kauwe JS, Amouyel P, Morgan K, Singleton A, Hardy J, Goate AM, Cruchaga C. (2014). Missense variants in *TREML2* protects against Alzheimer's disease. *Neurobiology of Aging*, 35(6): 1510.e19-1510.e26.
  11. **Jin SC**, Benitez BA\*, Karch CM\*, Cooper B, Skorupa T, Carrell D, Norton JB, Hsu S, Harari O, Cai Y, Bertelsen S, Goate AM, Cruchaga C. (2014). Coding variants in



- TREM2* increase risk for Alzheimer's disease. **Human Molecular Genetics**, 23(21): 5838-5846.
12. Cruchaga C, Karch CM\*, **Jin SC\***, Benitez BA, Cai Y, Guerreiro R, Harari O, Norton J, Budde J, Bertelsen S, Jeng AT, Cooper B, Skorupa T, Carrell D, Levitch D, Hsu S, Choi J, Ryten M; UK Brain Expression Consortium, Hardy J, Ryten M, Trabzuni D, Weale ME, Ramasamy A, Smith C, Sassi C, Bras J, Gibbs JR, Hernandez DG, Lupton MK, Powell J, Forabosco P, Ridge PG, Corcoran CD, Tschanz JT, Norton MC, Munger RG, Schmutz C, Leary M, Demirci FY, Bamne MN, Wang X, Lopez OL, Ganguli M, Medway C, Turton J, Lord J, Braae A, Barber I, Brown K; Alzheimer's Research UK Consortium, Pastor P, Lorenzo-Betancor O, Brkanac Z, Scott E, Topol E, Morgan K, Rogaeva E, Singleton AB, Hardy J, Kamboh MI, St George-Hyslop P, Cairns N, Morris JC, Kauwe JS, Goate AM. (2014). Rare coding variants in the phospholipase D3 gene confer risk for Alzheimer's disease. **Nature**, 505(7484): 550-554.
  13. **Jin SC\***, Carrasquillo MM\*, Benitez BA, Skorupa T, Carrell D, Patel D, Lincoln S, Krishnan S, Kachadoorian M, Reitz C, Mayeux R, Wingo TS, Lah JJ, Levey AI, Murrell AI, Hendrie H, Foroud T, Graff-Radford NR, Goate AM, Cruchaga C, Ertekin-Taner N. (2015). *TERM2* is associated with increased risk for Alzheimer's disease in African Americans. **Molecular Neurodegeneration**, 10; 10:19.
  14. Homsy J\*, Zaidi S\*, Shen Y\*, Ware JS\*, Samocha KE, Karczewski KJ, DePalma SR, McKean D, Wakimoto H, Gorham J, **Jin SC**, Deanfield J, Giardini A, Porter GA Jr, Kim R, Bilguvar K, López-Giráldez F, Tikhonova I, Mane S, Romano-Adesman A, Qi H, Vardarajan B, Ma L, Daly M, Roberts AE, Russell MW, Mital S, Newburger JW, Gaynor JW, Breitbart RE, Iossifov I, Ronemus M, Sanders SJ, Kaltman JR, Seidman JG, Brueckner M, Gelb BD, Goldmuntz E, Lifton RP, Seidman CE, Chung WK. (2015). *De novo* mutations in congenital heart disease with neurodevelopmental and other congenital anomalies. **Science**, 350(6265):1262-1266.
  15. Song W, Hooli B, Mullin K, **Jin SC**, Cella M, Ulland TK, Wang Y, Tanzi RE, Colonna M. (2016). Alzheimer's disease-associated *TREM2* variants exhibit either decreased or increased ligand-dependent activation. **Alzheimer's & Dementia**, 13(4): 381-387.
  16. Benitez BA, Davis AA, **Jin SC**, Ibanez L, Ortega-Cubero S, Pastor P, Choi J, Cooper B, Perlmutter JS, Cruchaga C. (2016). Resequencing analysis of five Mendelian genes and the top genes from genome-wide association studies in Parkinson's Disease. **Molecular Neurodegeneration**, 19; 11:29.
  17. Duran D\*, **Jin SC\***, DeSpensa T Jr\*, Nelson-Williams C, Cogal AG, Abrash EW, Harris PC, Lieske JC, Shimshak SJ, Mane S, Bilguvar K, DiLuna ML, Günel M, Lifton RP, Kahle KT. (2016). Digenic mutations of human OCRL paralogs in Dent's disease type 2 associated with Chiari malformation. **Human Genome Variation**, 3:16042.
  18. **Jin SC\***, Homsy J\*, Zaidi S\*, Lu Q, Morton S, DePalma S, Zeng X, Qi H, Chang W, Hung W, Sierant M, Haider S, Zhang J, Knight J, Bjornson R, Castaldi C, Tikhonova I, Bilguvar K, Mane S, Sanders S, Mital S, Russell M, Gaynor W, Deanfield J, Giardini A, Porter G, Srivastava D, Lo C, Shen Y, Watkins S, Yandell M, Yost J, Tristani-Firouzi M, Newburger J, Roberts A, Kim R, Zhao H, Kaltman J, Goldmuntz E, Chung W, Seidman J, Gelb B, Seidman C, Lifton RP, Brueckner M. (2017). Contribution of rare transmitted and *de novo* variants among 2,871 congenital heart disease probands. **Nature Genetics**, 49(11): 1593-1601.

19. Huang KL\*, Marcora E\*, Pimenova AA, Di Narzo AF, Kapoor M, **Jin SC**, Harari O, Bertelsen S, Fairfax BP, Czajkowski J, Chouraki V, Grenier-Boley B, Bellenguez C, Deming Y, McKenzie A, Raj T, Renton AE, Budde J, Smith A, Fitzpatrick A, Bis JC, DeStefano A, Adams HHH, Ikram MA, van der Lee S, Del-Aguila JL, Fernandez MV, Ibañez L; International Genomics of Alzheimer's Project; Alzheimer's Disease Neuroimaging Initiative, Sims R, Escott-Price V, Mayeux R, Haines JL, Farrer LA, Pericak-Vance MA, Lambert JC, van Duijn C, Launer L, Seshadri S, Williams J, Amouyel P, Schellenberg GD, Zhang B, Borecki I, Kauwe JSK, Cruchaga C, Hao K, Goate AM. (2017). A common haplotype lowers PU.1 expression in myeloid cells and delays onset of Alzheimer's disease. *Nature Neuroscience*, 20(8): 1052-1061.
20. Scholl UI, Stölting G, Schewe J, Thiel A, Tan H, Nelson-Williams C, Vichot AA, **Jin SC**, Loring E, Untiet V, Yoo T, Choi J, Xu S, Wu A, Kirchner M, Mertins P, Rump LC, Onder AM, Gamble C, McKenney D, Lash RW, Jones DP, Chune G, Gagliardi P, Choi M, Gordon R, Stowasser M, Fahlke C, Lifton RP. (2018). CLCN2 chloride channel mutations in familial hyperaldosteronism type II. *Nature Genetics*, 50(3):349-354.
21. Antwi P, Hong CS, Duran D, **Jin SC**, Dong W, DiLuna M, Kahle, K. (2018). A novel association of campomelic dysplasia with hydrocephalus due to an unbalanced chromosomal translocation upstream of SOX9. *Cold Spring Harbor Molecular Case Studies*, 4(3):a002766.
22. Fomchenko E\*, Duran D\*, Jin SC, Dong W, Erson-Omay EZ, Allocco A, Gaillard J, Cord B, Huttner A, Gunel M, DiLuna M, Kahle K. (2018). *De Novo MYH9* mutation in congenital scalp hemangioma. *Cold Spring Harbor Molecular Case Studies*, 4(4):a002998.
23. Furey CG\*, Choi J\*, **Jin SC**, Zeng X, Timberlake AT, Nelson-Williams C, Mansuri MS, Lu Q, Duran D, Panchagnula S, Allocco A, Karimy JK, Gaillard J, Antwi P, Khanna A, Loring E, Butler WE, Smith ER, Warf BC, Limbrick DD, Storm PB, Heuer G, Iskandar BJ, Johnston JM, Bilguvar K, Mane S, Tikhonova I, Castaldi C, Lopez-Giraldez F, Knight J, Alper SL, Haider S, Guclu B, Bayri Y, Sahin Y, Duncan CC, DiLuna ML, Gunel M, Lifton RP, Kahle KT. (2018). *De novo* mutation in genes regulating neural stem cell fate in human congenital hydrocephalus. *Neuron*, 99(2):302-314.e4.
24. Furey CG, Zeng X\*, Dong W\*, **Jin SC**, Choi J, Timberlake AT, Dunbar AM, Allocco AA, Gunel M, Lifton RP, Kahle KT. (2018). Human genetics and molecular mechanisms of congenital hydrocephalus. *World Neurosurgery*, 119:441-443.
25. Helbig K, Laurer R, Bahr J, Souza I, Myers C, Uysal B, Schwarz N, Gandini M, Huang S, Keren B, Mignot C, Afenjar A, Billette de Villemeur T, Heron D, Nava C, Valence S, Buratti J, Fagerberg C, Soerensen K, Kibaek M, Kamsteeg EJ, Koolen D, Gunning B, Schelhaas HJ, Kruer M, Fox Jordana, Bakhtiari S, Jarrar R, Padilla-Lopez SR, Lindstrom K, **Jin SC**, Zeng X, Bilguvar K, Papavasileiou A, Xing Q, Zhu C, Boysen K, Vairo F, Lanpher B, Klee E, Tilema JM, Payne E, Baker J, Haan E, Smith N, Corbett M, MacLennan A, Gecz J, Biskup S, Goldmann E, Rodan L, Kichula E, Segal E, Jackson K, Asamoah A, Dimmock D, McCarrier J, Botto L, Filloux F, Tvrdik T, Cascino G, Klingerman S, Neumann C, Wang R, Jacobsen J, Nolan M, Snell R, Lehnert K, Sadleir L, Guerrini R, Friez M, Lyons M, Achkar CE, Smith L, Rotenberg A, Poduri A, Sanchis-Juan A, Carss K, Rankin J, Zeman A, Raymond F, Hurles M, Blyth M, Kerr B, Ruiz K, Urquhart J, Hughes I, Banka S, Hedrich U, Scheffer I, Helbig I, Zamponi G, Lerche H, Mefford H. De novo pathogenic variants in *CACNA1E* cause developmental and

- epileptic encephalopathy with congenital contractures, macrocephaly, and dyskinesias. (2018). *American Journal of Human Genetics*, 103(5):666-678.
26. Duran D\*, Zeng X\*, **Jin SC\***, Choi J\*, Nelson-Williams C, Yatsula B, Gaillard J, Furey CG, Lu Q, Timberlake AT, Dong W, Sorscher MA, Loring E, Klein J, Allocco A, Hunt A, Conine S, Karimy JK, Youngblood MW, Zhang J, DiLuna ML, Matouk CC, Mane SM, Tikhonova IR, Castaldi C, López-Giráldez F, Knight J, Haider S, Soban M, Alper SL, Komiyama M, Ducruet AF, Zabramski JM, Dardik A, Walcott BP, Stapleton CJ, Aagaard-Kienitz B, Rodesch G, Jackson E, Smith ER, Orbach DB, Berenstein A, Bilguvar K, Gunel M, Lifton RP, Kahle KT. Mutation in epigenetic modifiers and signaling regulators of neurovascular development in Vein of Galen malformation (2019). *Neuron*, 101(3):429-443.e4.
  27. Chang SJ, **Jin SC**, Jiao X, Galán JE. Unique features in the intracellular transport of typhoid toxin revealed by a genome-wide screen (2019). *PLoS Pathogens*, 15(4):e1007704.
  28. **Jin SC\***, Furey CG\*, Zeng X, Allocco A, Nelson-Williams C, Karimy JK, Dong W, Ma S, Delpire E, Kahle KT. SLC12A ion transporter mutations in sporadic and familial human congenital hydrocephalus (2019). *Molecular Genetics & Genomic Medicine*, 7(9):e892.
  29. Allocco A\*, **Jin SC\***, Duy PQ\*, Furey CG, Zeng X, Dong W, Nelson-Williams C, Karimy JK, DeSpenza T, Hao LT, Reeves B, Haider S, Gunel M, Lifton RP, Kahle KT. Recessive inheritance of congenital hydrocephalus with other structural brain abnormalities caused by compound heterozygous mutations in *ATP1A3* (2019). *Frontiers Cellular Neuroscience*, 13:425.
  30. Robson A, Makova S, Barish S, Zaidi S, Mehta S, Drozd J, **Jin SC**, Gelb B, Seidman C, Chung WK, Lifton RP, Khokha M, Brueckner M. Core components of the Histone H2B monoubiquitination complex regulate heart development via transcriptional control of cilia motility (2019). *PNAS*, 116(28):14049-14054.
  31. Timberlake AT, **Jin SC**, Nelson-Williams C, Wu R, Furey CG, Islam B, Haider S, Loring E, Galm A, Yale Center for Genome Analysis, Steinbacher D, Larysz D, Staffenberg D, Flores R, Rodriguez E, Boggon TJ, Persing JA, Lifton RP. Damaging de novo and transmitted mutations in *TFAP2B* and genes of the BMP, WNT and Hedgehog pathways in syndromic craniosynostosis (2019). *PNAS*, 116(30):15116-15121.
  32. **Jin SC\***, Lewis SA\*, Bakhtiari S\*, Zeng X\*, Sierant MC, Shetty S, Nordlie SM, Elie A, Corbett MA, Norton BY, van Eyk CL, Haider S, Guida BS, Magee H, Liu J, Pastore S, Vincent JB, Brunstrom-Hernandez J, Papavasileiou A, Fahey MC, Berry JG, Harper K, Zhou C, Zhang J, Li B, Heim J, Webber DL, Frank MSB, Xia L, Xu Y, Zhu D, Zhang B, Sheth AH, Knight JR, Castaldi C, Tikhonova IR, López-Giráldez F, Keren B, Whalen S, Buratti J, Doummar D, Cho M, Retterer K, Millan F, Wang Y, Waugh JL, Rodan L, Cohen JS, Fatemi A, Lin AE, Phillips JP, Feyma T, MacLennan SC, Vaughan S, Crompton KE, Reid SM, Reddihough DS, Shang Q, Gao C, Novak I, Badawi N, Wilson YA, McIntyre SJ, Mane SM, Wang X, Amor DJ, Zarnescu DC, Lu Q, Xing Q, Zhu C, Bilguvar K, Padilla-Lopez S, Lifton RP, Gecz J, MacLennan AH, Kruer MC. Mutations disrupting neuritogenesis genes confer risk for cerebral palsy (2020). *Nature Genetics*, 52(10):1046-1056.
  33. Wagner M, Lévy J, Jung-Klawitter S, Bakhtiari S, Monteiro F, Maroofian R, Bierhals T, Hempel M, Elmaleh-Bergès M, Kitajima JP, Kim CA, Salomao JG, Amor DJ, Cooper MS,

- Perrin L, Pipiras E, Neu A, Doosti M, Karimiani EG, Toosi MB, Houlden H, **Jin SC**, Si YC, Rodan LH, Venselaar H, Kruer MC, Kok F, Hoffmann GF, Strom TM, Wortmann SB, Tabet AC, Opladen T. Loss of TNR causes a nonprogressive neurodevelopmental disorder with spasticity and transient opisthotonos (2020). *Genetics in Medicine*, 22(6):1061-1068.
34. Dong W\*, **Jin SC\***, Allocco A\*, Zeng X\*, Sheth AH, Panchagnula S, Castonguay A, Lorenzo LÉ, Islam B, Brindle G, Bachand K, Hu J, Sularz A, Gaillard J, Choi J, Dunbar A, Nelson-Williams C, Kiziltug E, Furey CG, Conine S, Duy PQ, Kundishora AJ, Loring E, Li B, Lu Q, Zhou G, Liu W, Li X, Sierant MC, Mane S, Castaldi C, López-Giráldez F, Knight JR, Sekula RF Jr, Simard JM, Eskandar EN, Gottschalk C, Moliterno J, Günel M, Gerrard JL, Dib-Hajj S, Waxman SG, Barker FG 2nd, Alper SL, Chahine M, Haider S, De Koninck Y, Lifton RP, Kahle KT. Exome Sequencing Implicates Impaired GABA Signaling and Neuronal Ion Transport in Trigeminal Neuralgia (2020). *iScience*, 23(10):101552.
  35. **Jin SC\***, Dong W\*, Kundishora AJ\*, Panchagnula S\*, Moreno-De-Luca A\*, Furey CG, Allocco AA, Walker RL, Nelson-Williams C, Smith H, Dunbar A, Conine S, Lu Q, Zeng X, Sierant MC, Knight JR, Sullivan W, Duy PQ, DeSpenza T, Reeves BC, Karimy JK, Marlier A, Castaldi C, Tikhonova IR, Li B, Peña HP, Broach JR, Kabachelor EM, Ssenyonga P, Hehnly C, Ge L, Keren B, Timberlake AT, Goto J, Mangano FT, Johnston JM, Butler WE, Warf BC, Smith ER, Schiff SJ, Limbrick DD Jr, Heuer G, Jackson EM, Iskandar BJ, Mane S, Haider S, Guclu B, Bayri Y, Sahin Y, Duncan CC, Apuzzo MLJ, DiLuna ML, Hoffman EJ, Sestan N, Ment LR, Alper SL, Bilguvar K, Geschwind DH, Günel M, Lifton RP, Kahle KT. Exome sequencing implicates genetic disruption of prenatal neuro-gliogenesis in sporadic congenital hydrocephalus (2020). *Nature Medicine*, 26(11):1754-1765.
  36. Morton SU, Shimamura A, Newburger PE, Opatowsky AR, Quiat D, Pereira AC, **Jin SC**, Gurvitz M, Brueckner M, Chung WK, Shen Y, Bernstein D, Gelb BD, Giardini A, Goldmuntz E, Kim RW, Lifton RP, Porter GA Jr, Srivastava D, Tristani-Firouzi M, Newburger JW, Seidman JG, Seidman CE. Association of Damaging Variants in Genes With Increased Cancer Risk Among Patients With Congenital Heart Disease (2020). *JAMA Cardiology*, e204947.
  37. Sullivan W, Reeves BC, Duy PQ, Nelson-Williams C, Dong W, **Jin SC**, Kahle KT. Exome Sequencing as a Potential Diagnostic Adjunct in Sporadic Congenital Hydrocephalus (2020). *JAMA Pediatrics*, 1;175(3):310-313.
  38. Diab N\*, **King S\***, Dong W\*, Allington G, Sheth A, **Peters ST**, Kahle KT#, **Jin SC**#. Analysis workflow to assess *de novo* genetic variants from whole-exome sequencing (2021). *STAR Protocols*, 10;2(1):100383.
  39. Dzinovic I, Skorvanek M, Pavelekova P, Zhao C, Keren B, Whalen S, Bakhtiari S, **Jin SC**, Kruer MC, Jech R, Winkelmann J, Zech M. Variant recurrence confirms the existence of a FBXO31-related spastic-dystonic cerebral palsy syndrome (2021). *Annals of Clinical and Translational Neurology*, 8(4):951-955.
  40. Alsharhan H, He M, Edmondson AC, Chen J, Donald T, Bakhtiari S, Amor D, Jones EA, Vassallo G, Vincent G, Cogné B, Deb W, Werners AH, **Jin SC**, Bilguvar K, Christodoulou J, Webster RI, Yearwood KR, Ng BG, Freeze HN, Kruer MC, Li D, Raymond KM, Bhoj EJ, Sobering AK. ALG13 X-linked intellectual disability: new

- variants, Glycosylation analysis, and expansion of the phenotype (2021). *Journal of Inherited Metabolic Disease*, doi: 10.1002/jimd.12378.
41. Bakhtiari S, Tafakhori A, **Jin SC**, Guida BS, Alehabib E, Firouzbadi S, Bilguvar K, Darvish H, Kruer MC. Recessive *COL4A2* mutation leads to intellectual disability, epilepsy, and spastic cerebral palsy (2021). *Neurology: Genetics*, 22;7(3):e583.
  42. Wiessner M, Maroofian R, Ni MY, Pedroni A, Müller JS, Stucka R, Beetz C, Efthymiou S, Santorelli FM, Alfares AA, Zhu C, Uhrova Meszarosova A, Alehabib E, Bakhtiari S, Janecke AR, Otero MG, Chen JYH, Peterson JT, Strom TM, De Jonghe P, Deconinck T, De Ridder W, De Winter J, Pasquariello R, Ricca I, Alfadhel M, van de Warrenburg BP, Portier R, Bergmann C, Ghasemi Firouzabadi S, **Jin SC**, Bilguvar K, Hamed S, Abdelhameed M, Haridy NA, Maqbool S, Rahman F, Anwar N, Carmichael J, Pagnamenta A, Wood NW, Tran Mau-Them F, Haack T; Genomics England Research Consortium, PREPARE network, Di Rocco M, Ceccherini I, Iacomino M, Zara F, Salpietro V, Scala M, Rusmini M, Xu Y, Wang Y, Suzuki Y, Koh K, Nan H, Ishiura H, Tsuji S, Lambert L, Schmitt E, Lacaze E, Küpper H, Dredge D, Skraban C, Goldstein A, Willis MJH, Grand K, Graham JM, Lewis RA, Millan F, Duman Ö, Dündar N, Uyanik G, Schöls L, Nürnberg P, Nürnberg G, Catala Bordes A, Seeman P, Kuchar M, Darvish H, Rebelo A, Bouçanova F, Medard JJ, Chrast R, Auer-Grumbach M, Alkuraya FS, Shamseldin H, Al Tala S, Rezazadeh Varaghchi J, Najafi M, Deschner S, Gläser D, Hüttel W, Kruer MC, Kamsteeg EJ, Takiyama Y, Züchner S, Baets J, Synofzik M, Schüle R, Horvath R, Houlden H, Bartesaghi L, Lee HJ, Ampatzis K, Pierson TM, Senderek J. Biallelic variants in HPDL cause pure and complicated hereditary spastic paraplegia (2021). *Brain*, 144(5):1422-1434.
  43. Omer S, **Jin SC**, Koumangoye R, Robert SM, Duran D, Nelson-Williams C, Huttner A, DiLuna M, Kahle KT, Delpire E. Protein kinase D1 variant associated with human epilepsy and peripheral nerve hypermyelination (2021). *Clinical Genetics*, doi: 10.1111/cge.13973.
  44. Kundishora AJ\*, **Peters ST\***, Pinard A, Duran D, Panchagnula S, Barak T, Miyagishima DF, Dong W, Smith H, Ocken J, Dunbar A, Nelson-Williams C, Haider S, Walker RL, Li B, Zhao H, Thumkeo D, Marlier A, Duy PQ, Diab NS, Reeves BC, Robert SM, Sujijantararat N, Stratman AN, Chen Y-H, **Zhao S**, Roszko I, Lu Q, Zhang B, Mane S, Castaldi C, López-Giráldez F, Knight JR, Bamshad MJ, Nickerson DA, Geschwind DH, Lang Chen S-S, Storm PB, Diluna ML, Matouk C, Orbach DB, Alper SL, Smith ER, Lifton RP, Gunel M, Milewicz DM, **Jin SC\***, Kahle KT#. *DIAPH1* mutations in non-East Asian patients with sporadic moyamoya disease (2021). *JAMA Neurology*, Jun 14:e211681. doi: 10.1001/jamaneurol.2021.1681.
  45. Li M\*, Zeng X\*, Jin L\*, **Jin SC**, Dong W, Brueckner M, Lifton RP, Lu Q, Zhao H. Integrative modeling of transmitted and *de novo* variants identifies novel risk genes for congenital heart disease (2021). *Quantitative Biology*, 9(2): 216-227.
  46. Lewis SA, Bakhtiari S, Heim J, Liu J, Huaang AJ, Musmacker A, **Jin SC**, Bilguvar K, Padilla-Lopez S, Kruer MC. Mutation in *ZDHC15* leads to hypotonic cerebral palsy,

- autism, epilepsy, and intellectual disability (2021). *Neurology: Genetics*, Jul 29;7(4):e602. doi: 10.1212/NXG.0000000000000602.
47. Calame DG\*, Bakhtiari S\*, Logan R, Coban-Akdemir Z, Du H, Mitani T, Fatih JM, Hunter JV, Herman I, Pehlivan D, Jhangiani SN, Person R, Schnur RE, **Jin SC**, Bilguvar K, Posey JE, Koh S, Firouzabadi SG, Alehabib E, Tafakhori A, Esmkhani S, Gibbs RA, Noureldeen MM, Zaki MS, Marafi D, Darvish H#, Kruer MC#, Lupski JR#. Biallelic loss-of-function variants in the splicing regulator *NSRP1* cause a severe neurodevelopmental disorder with spastic cerebral palsy and epilepsy (2021). *Genetics in Medicine*. doi: 10.1038/s41436-021-01291-x.
48. Richard EM\*, Bakhtiari S\*, Marsh APL\*, Kaiyrzhanov R\*, Wagner M\*, Shetty S, Pagnozzi A, Nordlie SM, Guida BS, Cornejo P, Magee H, Liu J, Norton BY, Webster RI, Worgan L, Hakonarson H, Li J, Guo Y, Jain M, Blessen A, Rodan LH, Abbott M, Comi A, Cohen JS, Alhaddad B, Meitingner T, Lenz D, Ziegler A, Kotzaeridou U, Brunet T, Chassevent A, Smith-Hicks C, Smith-Hicks J, Weiden T, Hahn A, Zharkinkbekova N, Turnpenny P, Tucci A, Yelton M, Horvath R, Gungor S, Hiz S, Oktay Y, Lochmuller H, Zollino M, Morleo M, Marangi G, Nigro V, Torella A, Pinelli M, Amenta S, TUDP Study Group, Husain RA, Grossmann B, Rapp M, Steen C, Marquardt I, Grimm M, Grasshoff U, Korenke GC, Owczarek-Lipska M, Neidhardt J, Radio FC, Mancini C, Sepulveda DJC, McWalter K, Begtrup A, Crunk A, Guillen Sacoto MJ, Person R, Schnur RE, Mancardi MM, Kreuder F, Striano P, Zara F, Chung WK, Marks WA, Tartaglia M, Striano V, Christodoulou J, Kaslin J, Padilla-Lopez S, Bilguvar K, Munchau A, Ahmed ZM, Hufnagel RB, Fahey MC, Marroffian R, Houlden H, Sticht H, Mane SM, Rad A, Vona B, **Jin SC**, Haack TB, Makowski C, Hirsch Y, Riazuddin S#, Kruer MC#. Biallelic variants in *SPATA5L1* lead to intellectual disability, spastic-dystonic cerebral palsy, epilepsy and hearing loss (2021). *American Journal of Human Genetics*. 7;108(10):2006-2016.
49. Zech M, Kumar KR, Reining S, Reunert J, Tchan M, Riley LG, Drew AP, Adam RJ, Berutti R, Biskup S, Derive N, Bakhtiari S, **Jin SC**, Kruer MC, Bardakjian T, Gonzales-Aalegre P, Sarmiento IJK, Mencacci NE, Lubbe SJ, Kurian MA, Cclot F, Menereett A, de Sainte Agathe J-M, Fung VSC, Vidailhet M, Baumann M, Marquardt T, Winkelmann J, Boesch S. Biallelic AOPEP loss-of-function variants linked to progressive dystonia with prominent limb involvement (2021). *Movement Disorders*. doi: 10.1002/mds.28804.
50. Barak T\*, Ristori E\*, Ercan-Sencicek AG, Miyagishima DF, Nelson-Williams C, Dong W, **Jin SC**, Prendergast A, Henegariu O, Erson-Omay EZ, Harmancı AS, Guy M, Gültekin B, Kilic D, Rai DK, Goc N, Aguilera SM, Gülez B, Altinok S, Ozcan K, Yarman Y, Coskun S, Sempou E, Deniz E, Hintzen J, Cox A, Fomchenko E, Jung SW, Ozturk AK, Louvi A, Bilgüvar K, Connolly Jr. ES, Khokha MK, Kahle KT, Yasuno K, Lifton RP, Mishra-Gorur K#, Nicoli S#, Günel M#. *PPIL4* is essential for brain angiogenesis and

mutated in intracranial aneurysm patients (2021). *Nature Medicine*. 27(12):2165-2175.

51. Fazeli W, Bamborschke D, Moawia A, Bakhtiari S, Tafakhori A, Giersdorf M, Hahn A, Weik A, Kolzter K, Shafiee S, Jin SC, Körber F, Lee-Kirsch MA, Cirak S, Darvish H, Kruer MC, Koy A. The phenotypic spectrum of PCDH12 associated disorders - five new cases and review of the literature (2021). *European Journal of Paediatric Neurology*. 30;36:7-13.
52. Zech M\*, Kopajtich R, Steinbrücker K\*, Bris C, Gueguen N, Feichtinger RG, Achleitner MT, Duzkale N, Périvier M, Koch J, Engelhardt H, Freisinger P, Wagner M, Brunet T, Berutti R, Smirnov D, Navaratnarajah T, Rodenburg RJT, Pais LS, Austin-Tse C, O'Leary M, Boesch S, Jech R, Bakhtiari S, Jin SC, Wilbert F, Kruer MC, Wortmann SB, Eckenweiler M, Mayr JA, Distelmaier F, Steinfeld R, Winkelmann J, Prokisch H. Variants in mitochondrial ATP synthase cause variable neurologic phenotypes (2021). *Annals of Neurology*. doi: 10.1002/ana.26293.
53. Tang CSM\*, Mononen M\*, Lam W-Y, Jin SC, Zhuang X, Garcia-Barcelo M-M, Lin Q, Yang Y, Sahara M, Eroglu E, Chien K#, Hong H#, Tma PKH#, Gruber P#. Sequencing of a Chinese Tetralogy of Fallot cohort reveals clustering mutations in myogenic heart progenitors (2021). *JCI Insight*. e152198. doi: 10.1172/jci.insight.152198.

#### • Book Chapters

1. Jin SC, Benitez BA, Deming Y, Cruchaga C. Pooled-DNA sequencing for elucidation of genomic risk factors, rare variants underlying Alzheimer's disease (2016). *Methods in Molecular Biology*. 1303:299-314.

#### • Reviews

1. Zeng X, Hunt A, Jin SC, Duran D, Gaillard J, Kahle KT. EphrinB2-EphB4-RASA1 signaling in human cerebrovascular development and disease (2019). *Trends in Molecular Medicine*. 25(4):265-286.
2. Lewis SA, Shetty S, Wilson B, Huang AJ, Jin SC, Smithers-Sheedy H, Fahey MC, Kruer MC. Insights from genetic studies of cerebral palsy (2021). *Frontiers in Neurology*. 11:625428.
3. Kundishora AJ, Singh AK, Allington G, Dunbar AM, Duy PQ, Ryou J, Alper SL, Jin SC, Kahle KT. Genomics of human congenital hydrocephalus (2021). *Child's Nervous System*. doi: 10.1007/s00381-021-05230-8.
4. Diab NS\*, Barish S\*, Dong W\*, Zhao S\*, Allington G, Yu X, Kahle KT, Brueckner M#, Jin SC#. Molecular genetics and complex inheritance of congenital heart disease (2021). *Genes*. 12(7):1020.
5. DeSpensa Jr T\*, Carlson M\*, Panchagnula S, Robert S, Duy PQ, Mermin-Bunnell N, Reeves BC, Kundishora AJ, Elsamadicy AA, Smith H, Ocken J, Alper SL, Jin SC, Hoffman EJ#, Kahle KT#. *PTEN* mutations in autism spectrum disorder and

congenital hydrocephalus: developmental pleiotropy and therapeutic targets (2021). *Trends in Neurosciences*. 44(12):961-976.

6. Allington G, Duy PQ, **Ryou J**, Singh A, Kiziltug E, Robert SM, Kundishora AJ, **King S**, Haider S, Kahle KT, **Jin SC**. Genomic approaches to improve the clinical diagnosis and management of patients with congenital hydrocephalus (2021). *Journal of Neurosurgery: Pediatrics*. 29:1-10.

- **Spotlight**

1. Duy PQ, Rakic P, Alper SL, Butler WE, Walsh CA, Sestan N, Geschwind DH, **Jin SC**, Kahle KT. Brain ventricles as windows into brain development and disease (2022). *Neuron*. 110(1):12-15.