

Curriculum Vitae
Sheng Chih Jin, Ph.D.

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Personal Information

ORCID: 0000-0002-5777-7262

Linkedin: <https://www.linkedin.com/in/sheng-chih-jin-3b60a011>

Website: <https://scjin.github.io/>

Address, Telephone and Email:

Washington University School of Medicine
Jin Lab, Department of Genetics
4515 McKinley Ave, Campus Box 8232
Floor 6, Room 6121
St. Louis MO, 63110-1010
Tel: (314) 362-4379
Email: jin810@wustl.edu

Present Position

2020 – Present Assistant Professor of Genetics, Washington University School of
School of Medicine, St. Louis, MO

Education

2000 – 2004 B.S. (Applied Mathematics), National Chiao Tung University, Hsinchu,
Taiwan
2006 – 2008 ScM (Biostatistics), Johns Hopkins Bloomberg School of Public
Health, Baltimore, MD, USA
2010 – 2014 Ph.D. (Human & Statistical Genetics), Washington University School
of Medicine, St. Louis, MO, USA
Advisors: Alison Goate and Carlos Cruchaga

Academic and Promotion History

2014 – 2018 **Postdoctoral Fellow**, Yale School of Medicine, New Haven, CT, USA
Advisors: Richard P. Lifton, Martina Brueckner, and Hongyu Zhao
2018 – 2020 **Postdoctoral Fellow**, Rockefeller University, New York, NY, USA
Advisors: Richard P. Lifton, Martina Brueckner, and Hongyu Zhao
2020 – Present **Assistant Professor**, Department of Genetics, Washington
University School of Medicine, St. Louis, MO

Employment History

2008 – 2010 **Senior Biostatistician**, Johns Hopkins University School of Medicine, Baltimore, MD, USA

Military Service

2004 – 2006 **Corporal**, Republic of China Army, Hsinchu, Taiwan

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

2022 **Pediatric Cardiac Genomics Consortium and Cardiovascular Development Data Resource Center Challenge Prize**, Bench to Bassinet Program, NHLBI

Editorial/Review Responsibilities

Ad Hoc Manuscript Reviewer:

Cell (2026), Journal of the American College of Cardiology (2024), Trends in Genetics (2023), American Journal of Human Genetics (2026), Genome Research (2022, 2025),

European Heart Journal (2018), Nature Communications (2024, 2025), eBioMedicine (2024, 2025), PLoS Genetics (2024), npj Genomic Medicine (2020), Brain (2022), Molecular Neurodegeneration (2014), Proteomics and Bioinformatics (2024), Human Genetics (2024), BMC Neurology (2013), Journal of Alzheimer's Disease (2014), Alzheimer's & Dementia (2016-2018), Genes (2020), Journal of Medical Genetics (2021), STAR Protocols (2022), Journal of Personalized Medicine (2022), Human Molecular Genetics (2025), Communications Medicine (2025)

Editorial Positions:

2013 – Present **Review Editor**, Frontiers in Genetics, Neurogenomics Section

Extramural Grant Review:

2022, 2023, 2025 **Grant Reviewer**, Hydrocephalus Association Innovator Award
 2023 **Grant Reviewer**, Sidra Medicine Precision Medicine Challenge Award (IRF 24)
 2023, 2024 **Ad Hoc Reviewer**, NIH, Cardiovascular and Respiratory Diseases (CRD) Study Section
 2023 **Ad Hoc Reviewer**, NIH ZMH1 ERB-S (02) S - Data Analysis and Coordination Center for the PsychENCODE Consortium (U24)
 2024, 2025 **Ad Hoc Reviewer**, NIH, Genetics of Health and Diseases (GHD) Study Section

Institutional Grant Review:

2021, 2022 **Ad Hoc Reviewer**, Clinical and Translational Research Funding Program, Washington University Institute of Clinical and Translational Sciences
 2022, 2024 **Ad Hoc Reviewer**, NGI Pilot Awards, Washington University NeuroGenomics and Informatics Center

Abstract Review for National and International Meetings:

2024, 2025 **Abstract Reviewer**, American Society of Human Genetics Meeting

Community Service Contributions

Washington University School of Medicine Committees and Administrative Service:

2020 – 2024 **DBBS Admissions Committee B Member**, Washington University School of Medicine
 2023 – Present **Co-Organizer**, Hope Center Monday Noon Seminars
 2025 – Present **Cross-Program DBBS Admissions Committee Member**, Washington University School of Medicine
 2025 – Present **Steering Committee Member**, Washington University in St. Louis

Molecular Genetics & Genomics and Computational & Systems
Biology Graduate Programs

National Panels, Committees, Boards:

2023	Planning Committee , Hydrocephalus Association & Rudi Schulte Research Institute Research Workshop
2023 – 2026	Elected Member , American Society of Human Genetics Digital Learning Committee
2024	Moderator , Platform Session on Machine Learning and AI Applications in Human Genetics, Annual Meeting of the American Society of Human Genetics
2023 – 2025	Co-Chair , NIH PRECISION Human Pain Data Subcommittee
2025 – Present	Co-Chair , NIH SMAHT Mitochondrial Focus Group
2026	Co-Organizer/Co-Moderator , American Society of Human Genetics' Spring Symposium— Omics, Regulation & AI for Precision Cardiovascular Medicine

Membership in Professional Societies:

2011 – Present	Member of the American Society of Human Genetics
2015 – Present	Member of the American Heart Association

Major Invited Professorships and Lectureships

External Seminars:

2016	Unraveling the Genetic Basis of Congenital Heart Disease. Institute of Biomedical Sciences Seminar Series, Academia Sinica, Taiwan
2017	Integrated Genomics Characterization of Complex Inheritance in Congenital Heart Disease. Institute of Biomedical Sciences Seminar Series, Academia Sinica, Taiwan
2018	Mutations in GTPase Signal Transduction Genes in Cerebral Palsy. 2 nd International Cerebral Palsy Genomics Consortium Conference, Zhengzhou, China (Invited Keynote Presentation)
2018	Integrated Genomics Characterization of Complex Inheritance in Congenital Heart Disease. Institute of Medical Genomics and Proteomics Seminar Series, National Taiwan University College of Medical, Taiwan
2018	Genomics Approaches to Understand the Genetic Architecture of Congenital Heart Disease and Neurodevelopmental Disorders. Eugene McDermott Center for Human Growth and Development Department Seminar Series, University of Texas Southwestern Medical Center, Dallas, TX
2018	Genomics Approaches to Understand the Genetic Architecture of Congenital Heart Disease and Neurodevelopmental Disorders.

	Institute for Genomic Medicine Seminar Series, Nationwide Children's Hospital, Columbus, OH
2019	Genomics Approaches to Understand the Genetic Architecture of Congenital Heart Disease and Neurodevelopmental Disorders. Waisman Center Seminar Series, University of Wisconsin – Madison, Madison, WI
2019	Genomics Approaches to Understand the Genetic Architecture of Congenital Heart Disease and Neurodevelopmental Disorders. Mindich Child Health and Development Institute Seminar Series, Icahn School of Medicine at Mount Sinai, New York, NY
2019	A Major Role for Genes that Control Developmental Neuritogenesis in Cerebral Palsy. 3 rd International Cerebral Palsy Genomics Consortium Conference, Anaheim, CA
2021	Genes and Mechanisms of Cerebral Palsy and Other Pediatric Movement Disorders. Boston Taiwanese Biotechnology Association Monthly Seminar Series, Boston Taiwanese Biotechnology Association (Virtual)
2022	Integrated Analysis of Genome Sequencing, Exome Sequencing, and Transcriptome Profiling in Congenital Hydrocephalus. Hydrocephalus Association Network for Discovery Science Webinar Series, HA CONNECT (Virtual)
2023	Molecular Genetics and Complex Inheritance of Congenital Hydrocephalus. Hydrocephalus Association & Rudi Schulte Research Institute Research Workshop, Dallas, TX
2024	Revealing Molecular and Cellular Mechanisms of Congenital Anomalies Using Integrative Genomics. Institute of Medical Genomics and Proteomics Seminar Series, National Taiwan University College of Medicine, Taiwan
2024	Revealing Molecular and Cellular Mechanisms of Congenital Anomalies Using Integrative Genomics. Institute of Molecular Biology Seminar Series, Academia Sinica, Taiwan
2024	Revealing Molecular and Cellular Mechanisms of Congenital Anomalies Using Integrative Genomics. Academic forum, Kaohsiung Medical University
2025	Uniparental Disomy in Congenital Heart Disease. Kids First Long Reads Working Group Meeting (Virtual)
2025	Lessons from HapMap Benchmarking to the Mitochondrial Goldmine. Somatic Mosaicism across Human Tissues Network Seminar Series (Virtual)
2026	Short Tandem Repeat Expansion in Idiopathic Peripheral Neuropathy. Merkin Peripheral Neuropathy and Nerve Regeneration Center, Johns Hopkins University (Virtual)

Internal Seminars at Washington University:

2017	Department of Genetics
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2021	Pediatric Neurology Research Working Group
2021	Genetics and Genomic Medicine Case Conference
2021	Department of Developmental Biology
2021	Department of Computer Science & Engineering
2022	MSTP Future of Medicine Seminar
2022	Department of Genetics Retreat
2022	Center for Cardiovascular Research
2023	Intellectual and Developmental Disabilities Research Center Inaugural Symposium
2024	Center of Regenerative Medicine Faculty Retreat
2025	I2DB Seminar
2025	Hope Center Monday Noon Seminar
2026	Department of Cell Biology & Physiology

Research Support

Present Grants:

R01NS131610	Jin (PI)	9/1/2024 – 5/31/2030	2.4CM
NINDS		\$3,157,725	

“Molecular and cellular characterization of congenital hydrocephalus”

The major goal is to establish a diverse cohort of primary congenital hydrocephalus (CH) patients, with a particular emphasis on non-European populations, to ensure broader applicability and inclusivity of our findings. Through the integration of genomics, phenomics, and neuroimaging data, we will comprehensively characterize germline and somatic variants, explore temporal expression patterns of CH risk genes across various cell types, enhance diagnostic precision, and unravel genotype-phenotype correlations. Furthermore, the development of the HYDRO-Seq Genome Browser, integrated with the WashU Epigenome Browser, will streamline data analysis and enable seamless sharing of patient genetic and phenotypic information.

Role: PD/PI

Children’s Discovery Institute Faculty Scholar Award	10/1/2021 – 9/30/2026	0.42CM
WashU Children’s Discovery Institute	Jin (PI)	\$300,000

“Human Genetics and Molecular Mechanisms of Cerebral Palsy”

The major goal of this project is to utilize an integrative, multi-dimensional omics approach coupled with functional genomics to discover novel cerebral palsy genetic risk factors and provide mechanistic insight into newly identified genetic causes.

Role: PD/PI

Project Grant PRG03121	Jin (PI)	6/1/2022 – 5/31/2027	0.12CM
Cerebral Palsy Alliance Research Foundation		\$225,000	

“Discovery of novel genetic variations in cerebral palsy by whole genome sequencing”

The major goal is to identify novel genetic causes for therapeutic intervention and increase precision in genetic counseling, outcome prognostication, and treatment

stratification, and inform future clinical trial design.

Role: PD/PI

U19NS130607	Milbrandt/DiAntonio/Jin (MPI)	9/30/2022–8/31/2027	0.6CM
NINDS		\$1,214,763 (Jin)	

“INTERCEPT: Integrated Research Center for Human Pain Tissues (Project 1)”

In Project 1, we propose to identify additional genes involved in pain pathways via analysis of the genomes of a cohort of patients with idiopathic painful neuropathy. The proposed studies to enumerate, characterize, and spatially map these nerve cells, will provide a foundational resource for the pain community.

Role: Project Lead

U19NS130607	Jin/Zhao (MPI)	9/30/2022–8/31/2027	0.6CM
NINDS		\$347,161 (Jin)	

“INTERCEPT: Integrated Research Center for Human Pain Tissues (Data Core)”

The primary purpose of the Data core is to collect, store, coordinate, and transfer all data, metadata, and analysis strategies generated within the U19 center (the INTERCEPT pain center) to the U24 DCIC and the HEAL Platform. The Data core will conduct multiple interdisciplinary genomic and statistical analyses to study and integrate the multi-level omics data obtained from the three individual component projects of the INTERCEPT Center. The main objective of the Data core is to serve as a backbone support resource for experimental design refinement, data quality control, management, integration, analyses, and interpretation, and

Role: Project Lead

U24NS132103	Wang/Fulton/Lawson (MPI)	4/15/23 – 3/31/2028	2.4CM
NINDS		\$345,360 (Jin)	

“WashU Somatic Mosaicism across Human Tissues (SMaHT) Program Organizational Center”

The overall goals of the WashU SMaHT-OC are to manage network coordination, lead consortium communications and outreach, and to develop and manage the network’s websites, develop and manage engagement, training and collaborative programs. I only receive salary support from this grant.

Role: Co-Investigator

UM1DA058219	Wang/Fulton/Shen (MPI)	5/1/2023 – 4/30/2028	2.4CM
NIDA		\$629,300 (Jin)	

“WashU-VAI Somatic Mosaicism across Human Tissues (SMaHT) Program Genome Characterization Center”

A fundamental goal of our proposed GCC is to generate high throughput, high quality, and high consistency genomic DNA and RNA sequencing data, and to construct a comprehensive catalogue of the human somatic variation together with other members of the Network. I only receive salary support from this grant.

Role: Co-Investigator

R01NS127108	Kruer (PI)	2/1/2023–1/31/2028	1.2CM
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NINDS \$358,747 (Jin)
 “Genomic analysis of the Multiplex, Autozygous Populations in Cerebral Palsy (MAP CP) cohort: a focused approach to a complex disease”
 The goal of this project is to discover genes with pathogenic variants detected in consanguineous populations and characterize molecular and developmental pathways that lead to cerebral palsy in neuronal and in vivo models. The total costs are the amount awarded to WashU by the prime institution.
 Role: Co-Investigator

RM1NS135283 Haroutounian/Creed/Rodebaugh/Sinha/Lu/Shepherd (MPI)
 NINDS 9/18/2024-8/31/2027 0.36CM
 \$26,918 (Jin)
 “Integrated Mechanisms, Phenotypes, and Translational Underpinnings of Chronic Pain after Surgery (IMPETUS)”
 The goal is to gain integrated mechanistic insights into peripheral and central biological processes that contribute to Chronic postsurgical pain (CPSP), for developing targeted strategies for its mitigation. I only receive salary support from this grant.
 Role: Co-Investigator

Past Funding:

R01NS111029 Kahle/Jin/Deniz (MPI) 4/1/2020 – 1/31/2026 2.4CM
 NINDS \$158,028 (Jin)
 “Human Genetics and Molecular Mechanisms of Congenital Hydrocephalus”
 The goal of this project is to determine the genetic architecture and cellular and molecular mechanisms of human congenital hydrocephalus. The total costs are the amount awarded to WashU by the prime institution.
 Role: MPI

R00HL143036 Jin (PI) 4/1/2020 – 3/31/2023 3.0CM
 NHLBI \$730,167
 “Integrative Genomic Analysis of Congenital Heart Disease”
 This project seeks to understand the complex genetics, to evaluate the sex differences in their genetic risk for CHD, and to determine the additive effect of common variants and rare deleterious variants on CHD using novel human genetics, genomics, and statistical approaches.
 Role: PD/PI

Zebrafish Models for Pediatric Research Services Cooperative 2/5/2021 – 6/30/2023
 WashU Children’s Discovery Institute Jin (PI) \$10,000
 “Functional characterization of the Diaph1 gene using the zebrafish knock model”
 The major goal of this project is to provide new insight into MMD pathophysiology with potentially immediate implications for targeted therapy for MMD patients.
 Role: PD/PI

Clinical and Translational Research Funding Program 3/1/2021 – 2/28/2022

Washington University ICTS Jin (PI) \$50,000
 “Long-Read Genome Sequencing and Integrative Genomic Analysis for Cerebral Palsy”
 The major goal of this project is to utilize a multi-omics approach coupled with advanced
 statistical methods to discover novel CP risk genes
 Role: PD/PI

Hydrocephalus Association Innovator Award	12/31/2021 – 3/31/2023
Hydrocephalus Association	Jin (PI) \$50,000
“A Genome-Wide Assessment of Noncoding Risk Variants in Congenital Hydrocephalus” The major goal of this project is to leverage whole-genome sequencing with recent advances in transcriptomics, computational genetics, integrative genomics, and artificial intelligence-aided phenomics, in a convergent, systems biology approach that seeks to translate genomic discoveries into pathophysiological insights that improve congenital hydrocephalus risk stratification and patient outcomes. Role: PD/PI	

R01NS106298	Kruer (PI)	4/1/2019–12/31/2023	0.12CM
NINDS		\$20,292 (Jin)	
“Genomic Insights into the Neurobiology of Cerebral Palsy”			
The goal of this application is to extend our preliminary findings to encompass a much larger cohort, providing the power required to define fundamental aspects of the genetic basis of CP.			
Role: Subaward Co-Investigator			

R01NS117609	Kahle/Boggon (MPI)	7/1/2020 – 6/30/2025	0.6CM
NINDS		\$191,213 (Jin)	
“Human Genetics and Molecular Mechanisms of Vein of Galen Aneurysmal Malformation” The goal of this project is to use a multidisciplinary approach that combines cutting-edge, next-generation DNA sequencing and bioinformatics with biochemistry and structural biology to elucidate the genetic architecture and molecular mechanisms of Vein of Galen aneurysmal malformation. The total costs are the amount awarded to WashU by the prime institution Role: Subaward Co-Investigator			

R01AR067715	Dobbs/Gurnett (MPI)	8/1/2020-7/31/2025	0.24CM
NIAMS		\$52,870 (Jin)	
"Genetic Risk Factors for Severe Scoliosis"			
The goal of this project is to study scoliosis in diverse patient populations and to comprehensively assess variant pathogenicity using our newly developed functional genomics methods. I only received salary support from this grant.			
Role: Co-Investigator			

Mentorship & Sponsorship Record

Postdoctoral Fellows:

- **Yung-Chun Wang, PhD** (2021 – 2024). Now Instructor in the Jin Lab

Graduate Students:

- **Shujuan Zhao**, DBBS Molecular Genetics and Genomics (2020 – 2025), co-mentored with Kris Kahle, Doctoral (Ph.D.) thesis successfully defended June 6th, 2025. Now Research Associate at Harvard Medical School
- **Nahyun Kong**, DBBS Human & Statistical Genetics (2022 – Present) thesis successfully defended July 14th, 2026
- **Julie Choi**, DBBS Molecular Genetics and Genomics (2022 – 2025), co-mentored with Jeffrey Milbrandt, Doctoral (Ph.D.) thesis successfully defended June 27th, 2025. Now manager at Cerapedics Inc.
- **Zitian Tang**, DBBS Biomedical Informatics & Data Science (2023 – Present)
- **Jenna Ulibarri**, DBBS Molecular Genetics and Genomics (2023 – Present)
- **Wendy Dong**, MSTP specialized in Computational & Systems Biology (2023 – Present), co-mentored with Jeffrey Milbrandt
- **Emma Casey**, DBBS Molecular Genetics and Genomics (2024 – Present)
- **Purva Patel**, DBBS Computational & Systems Biology (2024 – Present)
- **Zefan (Vivien) Li**, DBBS Molecular Cell Biology (2024 – Present)
- **Yijia Wu**, DBBS Molecular Genetics and Genomics (2026 – Present)

Master's Students:

- **Samuel Peters**, SLU Bioinformatics and Computational Biology (2020 – 2021). Now Research Specialist at WashU's McDonnell Genome Institute
- **Spencer King**, WashU Computer Science (2020 – 2021). Now Bioinformatician at Geneoscopy
- **Xiaobing Yu**, WashU Computer Science (2021 – 2022). Now PhD student in Imaging Science at WashU

Postbaccalaureate trainees:

- **Max Wrubel**, Opportunities in Genomic Research Scholar (2021 – 2022). Now Bioinformatician in Alison Goate's lab at Mount Sinai

Undergraduate Students:

- **Kareena Joshipura**, Opportunities in Genomic Research Scholar (2021). Now Software Engineer in Capgemini
- **Athziri Marcial-Rodriguez**, Opportunities in Genomic Research Scholar (2022). Now Kornfeld Post-Bac Scholar in Jeffrey Gordon's Lab at WashU
- **Cabria Shelton**, Opportunities in Genomic Research Scholar (2022). Now master's Student at Wake Forest U

- **Andrew Ruttenberg**, WashU Computer Science on the Pre-Med Track (2022 – 2025). Now PhD Student at U of Toronto
- **Tuğçe Iyiyol**, WashU Biology on the Pre-Med Track (2022 – 2024). Now applying to Med Schools
- **Brian Yu**, U Chicago Computer Science (2024 – Present).
- **Aria Ma**, Opportunities in Genomic Research Scholar (2024). Now Chief Executive Officer & Founder of Jadewell
- **Owen Limbrick**, WashU Biology on the Pre-Med Track (2024 – 2025).
- **Jack Yu**, WashU Biology & Computer Science on the Pre-Med Track (2025 – Present).

Rotation Students:

- **Jian Ryou**, DBBS Human & Statistical Genetics (2020)
- **Changfeng Chen**, DBBS Molecular Cell Biology (2021)
- **Prashant Kumar Kuntala**, DBBS Computational & Systems Biology (2021)
- **Kuangying Yang**, DBBS Human & Statistical Genetics (2021)
- **Mariam Khanfar**, DBBS Human & Statistical Genetics (2021)
- **Lei Lu**, WashU Computer Science (2022)
- **Yuxiao Yu**, WashU MSTP (2022)
- **Vincent Gillespie**, DBBS Molecular Genetics and Genomics (2022)
- **Ai Zhang**, DBBS Human & Statistical Genetics (2022)
- **Yu-Liang Yeh**, DBBS Biomedical Informatics & Data Science (2023)
- **Justin Chen**, DBBS Computational & Systems Biology (2023)
- **Qichen Fu**, DBBS Molecular Genetics and Genomics (2023)
- **Tingkuan Chu**, DBBS Molecular Genetics and Genomics (2024)
- **Yu Liu**, DBBS Molecular Cell Biology (2024)
- **Sam Greenberg**, DBBS Molecular Genetics and Genomics (2024)
- **Wilber Palma**, DBBS Molecular Genetics and Genomics (2024)
- **Cassia Williams-Rogers**, WashU MSTP (2026)

Fellowships/Scholarships/Grants to Trainees/Mentees:

NIH TL1 Predoctoral Clinical Research Training Fellowship

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: 6/1/2021 – 5/31/2022

Amount: \$2,110/month (Declined)

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 Wang

Role: Sponsor

Duration: 7/1/2021

Amount: \$10,000 (signing bonus)

Scholarships to attend Jackson Laboratory's Human and Mammalian Genetics and Genomics:

The McKusick Short Course

Agency: Jackson Laboratory

Postdoc(s)/Student(s): Max Wrubel

Role: Sponsor

Duration: 7/2022

Amount: \$1,800

Scholarships to attend Jackson Laboratory's Human and Mammalian Genetics and Genomics:

The McKusick Short Course

Agency: Jackson Laboratory

Postdoc(s)/Student(s): Shujuan Zhao

Role: Sponsor

Duration: 7/2022

Amount: \$900

Lucille P. Markey Special Emphasis Pathway in Human Pathobiology Fellowship

Agency: Washington University School of Medicine

Postdoc(s)/Student(s): Shujuan Zhao

Role: Sponsor

Duration: 8/2022 – 8/2024

Amount: \$4,000 (one-time stipend supplement)

Maximizing Student Development (IMSD) Program

Agency: Washington University School of Medicine

Postdoc(s)/Student(s): Jenna Ulibarri

Role: Sponsor

Duration: 9/2022 – 9/2023

Amount: \$27,144

Washington University's T32 Genome Analysis Training Program

Agency: Washington University School of Medicine

Postdoc(s)/Student(s): Julie Choi

Role: Co-sponsor

Duration: 10/2022 – 9/2025

Amount: \$81,720 total

Study Abroad Scholarships

Agency: Mogam Science Scholarship Foundation

Postdoc(s)/Student(s): Nahyun Kong
Role: Sponsor
Duration: 1/2023
Amount: \$10,000 (one-time allowance)

Scholarships to attend Jackson Laboratory's Human and Mammalian Genetics and Genomics:
The McKusick Short Course
Agency: Jackson Laboratory
Postdoc(s)/Student(s): Zitian Tang
Role: Sponsor
Duration: 7/2023
Amount: \$500

Maximizing Student Development (IMSD) Program
Agency: Washington University School of Medicine
Postdoc(s)/Student(s): Emma Casey
Role: Sponsor
Duration: 9/2023 – 9/2024
Amount: \$27,144

Washington University's T32 Genome Analysis Training Program
Agency: Washington University School of Medicine
Postdoc(s)/Student(s): Wendy Dong
Role: Co-sponsor
Duration: 9/2023 – 8/2026
Amount: \$84,156 total

Scholarships to attend Cold Spring Harbor Laboratory's Scientific Writing Retreat
Agency: Cold Spring Harbor Laboratory
Postdoc(s)/Student(s): Yung-Chun Wang
Role: Sponsor
Duration: 10/2023
Amount: \$500

Washington University's T32 Cellular & Molecular Biology Training Program
Agency: Washington University School of Medicine
Postdoc(s)/Student(s): Jenna Ulibarri
Role: Sponsor
Duration: 11/2023 – 6/2025
Amount: \$49,764 total

Annual Hope Center Retreat Poster Award
Agency: Arts & Sciences at Washington University in St. Louis
Postdoc(s)/Student(s): Julie Choi
Role: Co-sponsor

Duration: 4/2024
Amount: \$1,000 (one-time allowance)

Washington University Summer Undergraduate Research Fellowship Program
Agency: Arts & Sciences at Washington University in St. Louis
Postdoc(s)/Student(s): Brian Yu
Role: Sponsor
Duration: 5/2024 – 8/2024
Amount: \$2,500 (Declined)

Scholarships to attend Jackson Laboratory's Human and Mammalian Genetics and Genomics: The McKusick Short Course
Agency: Jackson Laboratory
Postdoc(s)/Student(s): Emma Casey
Role: Sponsor
Duration: 08/2024
Amount: \$1,750

Scholarships to attend Jackson Laboratory's Human and Mammalian Genetics and Genomics: The McKusick Short Course
Agency: Jackson Laboratory
Postdoc(s)/Student(s): Purva Patel
Role: Sponsor
Duration: 8/2024
Amount: \$500

Scholarships to attend Jackson Laboratory's Human and Mammalian Genetics and Genomics: The McKusick Short Course
Agency: Jackson Laboratory
Postdoc(s)/Student(s): Zefan (Vivien) Li
Role: Sponsor
Duration: 8/2024
Amount: \$500

Predoctoral semifinalist for the 2024 Trainee Research Excellence Awards
Agency: American Society of Human Genetics
Postdoc(s)/Student(s): Nahyun Kong
Role: Sponsor
Duration: 8/2024
Amount: Complimentary registration to the 2024 ASHG Annual Meeting and \$750

Human Cells, Tissues, and Organoids Core Microgrant
Agency: Center of Regenerative Medicine
Postdoc(s)/Student(s): Yung-Chun Wang
Role: Sponsor

Duration: 12/2024 – 12/2025
Amount: \$2,500

Research Supplements to Promote Diversity in Health-Related Research
Agency: National Institute of Neurological Disorders and Stroke
Postdoc(s)/Student(s): Emma Casey
Role: Sponsor
Duration: 1/2025 – 12/2027
Amount: \$225,981 (Rescinded due to President's Executive Order)

Full Scholarship to attend the Bruce Weir Summer Institute in Statistical Genetics
Agency: Bruce Weir Summer Institute in Statistical Genetics
Postdoc(s)/Student(s): Zefan (Vivien) Li
Role: Sponsor
Duration: 6/4/2025 - 6/13/2025
Amount: \$3,640

Washington University's T32 Cellular & Molecular Biology Training Program
Agency: Washington University School of Medicine
Postdoc(s)/Student(s): Emma Casey
Role: Sponsor
Duration: 9/2025 – 8/2026
Amount: \$33,838 total

ASHG Reviewers' Choice Award
Agency: American Society of Human Genetics
Postdoc(s)/Student(s): Zitian Tang
Role: Sponsor
Duration: 10/2025
Amount: N/A

Full Scholarship to attend 2026 St. Jude National Graduate Student Symposium
Agency: St. Jude Children's Research Hospital
Postdoc(s)/Student(s): Purva Patel
Role: Sponsor
Duration: 3/24/2026 - 3/27/2026
Amount: All expenses covered (travel, lodging, registration)

Pivot 314 Fellowship
Agency: WashU Center for Career Engagement
Postdoc(s)/Student(s): Zefan (Vivien) Li
Role: Sponsor
Duration: 5/1/2026 - 8/31/2026
Amount: \$4,000 (one-time stipend supplement)

Summer Undergraduate Research Guided Experience (SURGE) program

Agency: WashU Office of Undergraduate Research

Postdoc(s)/Student(s): Jack Yu

Role: Sponsor

Duration: 5/1/2026 - 8/31/2026

Amount: \$2,700 (one-time stipend supplement)

CSHL Summer 2026 Advanced Techniques in Molecular Neuroscience Course

Agency: CSHL

Postdoc(s)/Student(s): Emma Casey

Role: Sponsor

Duration: 6/25/2026 - 7/11/2026

Amount: \$2,650 (50% tuition support)

Scholarships to attend Jackson Laboratory's Human and Mammalian Genetics and Genomics: The McKusick Short Course

Agency: Jackson Laboratory

Postdoc(s)/Student(s): Yijia Wu

Role: Sponsor

Duration: 07/2026

Amount: \$1,500

Teaching

Courses:

2021, 2022	Lecturer , Bio5488: Genomics, Washington University School of Medicine (four lectures, totaling six hours)
2021, 2022	Study Section Co-Leader , Bio5491: Advanced Genetics, Washington University School of Medicine (one study section, totaling 1.5 hours)
2022	Lecturer , Bio5487: Genetics & Genomics of Disease, Washington University School of Medicine (one lecture, totaling 1.5 hours)
2022 – Present	Co-director , Bio5488: Genomics, Washington University School of Medicine (six lectures, totaling 9 hours)
2023	Immersion Program Co-Leader , Washington University School of Medicine (3 full days, totaling 24 hours)
2023	Lecturer , Bio5285: Current Topics in Human and Mammalian Genetics, Washington University School of Medicine (one lecture, totaling 1.5 hours)
2024, 2025	Lecturer , M65 Peds 511: Clinical Genetics & Genomics I, Washington University School of Medicine (one lecture, totaling 1.5 hours)

2025 **Lecturer**, Cancer Genomics, Washington University Continuing & Professional Studies Prison Education Project (two lectures, totaling 6 hours)

Thesis Examination Committee:

- **Ciyang Wang**, DBBS Molecular Genetics & Genomics Graduate Student in Laboratory of Dr. Carlos Cruchaga. (2021 – 2025)
- **Chengran Yang**, DBBS Human & Statistical Genetics Graduate Student in Laboratory of Dr. Carlos Cruchaga. (2021)
- **Tong Wu**, WashU Biomedical Engineering Graduate Student in Laboratory of Dr. Jeffrey Milbrandt. (2021 – 2025)
- **Caitlin Dingwall**, WashU MSTP Student in Laboratory of Dr. Jeffrey Milbrandt. (2023)
- **Kuangying Yang**, DBBS Human & Statistical Genetics Graduate Student in Laboratory of Dr. Angela Hirbe. (2023 – 2026)
- **Gervette Penny**, DBBS Molecular Genetics & Genomics Graduate Student in Laboratory of Dr. Susan Dutcher. (2023)
- **Kangwen Xiao**, DBBS Molecular Genetics & Genomics Graduate Student in Laboratory of Dr. Angela Hirbe. (2025 – Present)

Qualifying Exam Committee:

- **Ji-Sun Kwon**, DBBS Computational & Systems Biology (2021)
- **Evelyn Craigen**, DBBS Molecular Genetics and Genomics (Chair; 2021)
- **Dan Western**, DBBS Human & Statistical Genetics (2023)
- **Kuangying Yang**, DBBS Human & Statistical Genetics (2023)
- **Grace Cooper**, DBBS Human & Statistical Genetics (Chair; 2023)
- **Juanru Guo**, DBBS Computational & Systems Biology (2023)
- **Mariam Khanfar**, DBBS Human & Statistical Genetics (Chair; 2023)
- **Chia-Jung Lee**, DBBS Computational & Systems Biology (2023)
- **Chien-Wei Peng**, DBBS Human & Statistical Genetics (2024)
- **Paul Lee**, WashU MSTP (Chair; 2024)
- **Arnold Federico**, DBBS Molecular Genetics & Genomics (2024)
- **Joey Nichols**, WashU MSTP (Chair; 2025)
- **Lloyd Tripp**, DBBS Molecular Genetics & Genomics (2025)
- **Qichen Fu**, DBBS Molecular Genetics & Genomics (2025)
- **Bart Olszowy**, DBBS Computational & Systems Biology (Chair; 2025)
- **Yuchen Cheng**, DBBS Molecular Genetics & Genomics (Chair; 2025)
- **Yu Liu**, DBBS Molecular Cell Biology (2025)

- **Wilber Palma**, DBBS Molecular Genetics & Genomics (2025)
- **Yuelai Wang**, DBBS Computational & Systems Biology (2026)

Bibliography

- Corresponding or co-corresponding author papers are indicated with a hash sign (#)
- Lab members are shown in **bold**
- Equal-contribution preprints and papers are indicated with an asterisk (*)

Original, Peer Reviewed Articles in Refereed Journals

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. Genome-wide and candidate gene association study of cigarette smoking behavior. *PLoS ONE*, 2009;4(2):e4653.
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Reviews, Chapters, and Editorials:

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3. Lewis SA, Shetty S, Wilson B, Huang AJ, **Jin SC**, Smithers-Sheedy H, Fahey MC, Kruer MC. Insights from genetic studies of cerebral palsy. *Frontiers in Neurology*. 2021 Jan 21;11:625428.

4. Kundishora AJ, Singh AK, Allington G, Dunbar AM, Duy PQ, **Ryou J**, Alper SL, **Jin SC**, Kahle KT. Genomics of human congenital hydrocephalus. *Child's Nervous System*. 2021 Nov;37(11):3325-3340.
5. #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. *Genes*. 2021 Jun 30;12(7):1020.
6. 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. *Trends in Neurosciences*. 2021 Dec; 44(12):961-976.
7. #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. *Journal of Neurosurgery: Pediatrics*. 2021 Oct 29;29(2):168-177.
8. #**Wang Y-C***, Wu Y*, **Choi J***, Allington G*, **Zhao S***, **Khanfar M***, **Yang K***, **Fu P-Y**, **Wrubel M**, **Yu X**, Mekbib KY, Ocken J, Smith H, Shohfi J, Kahle KT, Lu Q#, **Jin SC**#. Computational genomics in the era of precision medicine: applications to variant analysis and gene therapy. *Journal of Personalized Medicine*. 2022 Jan 27;12(2):175.
9. 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. *Neuron*. 2022 Jan 5;110(1):12-15.
10. Qureshi HQ*, Mekbib KY*, Allington G*, Elsamadicy AA, Duy PQ, Kundishora AJ, **Jin SC**, Kahle KT. Familial and syndromic forms of arachnoid cyst implicate genetic factors in disease pathogenesis. *Cerebral Cortex*. 2023 Mar 10;33(6):3012-3025.
11. Mekbib KY, Muñoz W, Allington G, McGee S, Mehta NH, Shofi JP, Fortes C, Le HT, Nelson-Williams C, Nanda P, Dennis E, Kundishora AJ, Khanna A, Smith H, Ocken J, Greenberg ABW, Wu R, Moreno-De-Luca A, DeSpensa T Jr, Zhao S, Marlier A, **Jin SC**, Alper SL, Butler WE, Kahle KT. Human genetics and molecular genomics of Chiari malformation type 1. *Trends in Molecular Medicine*. 2023 Dec;29(12):1059-1075.
12. #Lewis SA*, **Ruttenberg A***, **Iyiyol T**, **Kong N**, **Jin SC**#, Kruer MC#. Potential clinical applications of advanced genomic analysis in cerebral palsy. *EBioMedicine*. 2024 Jul 5;106:105229.
13. #**Choi J***, **Tang Z***, **Dong W**, **Ulibarri J**, **Mehinovic E**, Thomas S, Höke A, **Jin SC**. Unleashing the power of multi-omics: unraveling the molecular landscape of peripheral neuropathy. *Annals of Clinical and Translational Neurology*. 2025 March 24. doi:10.1002/acn3.70019.

Abstracts:

1. *Selected Oral Presentation*: Deep Resequencing of GWAS Loci Associated with Alzheimer's Disease. 2012 Alzheimer's Association International Conference, July 19, 2012, Vancouver, Canada
2. *Selected Oral Presentation*: Novel Coding Variants in *TREM2* increase Risk for Alzheimer's Disease. 2014 Alzheimer's Association International Conference, July 13, 2014, Copenhagen, Denmark

3. *Selected Platform Talk*: Inherited and De Novo Variant Analysis of 2871 WES probands. 2016 NHLBI Bench to Bassinet Research Program Annual Face-To-Face Conference, December 9, 2016, Rockville, MD
4. *Selected Platform Talk*: Expanded Whole Exome Sequencing Cohort Reveals Additional Novel CHD Genes. 2017 NHLBI Bench to Bassinet Research Program Annual Face-To-Face Conference, October 12, 2017, Rockville, MD
5. *Selected Platform Talk*: Trio-Based SNP Array Analysis in Congenital Heart Disease. 2019 NHLBI Bench to Bassinet Research Program Annual Face-To-Face Conference, October 10, 2019, Rockville, MD
6. *Selected Platform Talk*: Exome Sequencing Implicates Genetic Disruption of Prenatal Neuro-Gliogenesis in Sporadic Congenital Hydrocephalus. 2020 Annual Meeting of the American Society of Human Genetics, October 28, 2020, Virtual
7. *#Selected Platform Talk*: Discovery of Uniparental Disomy in 3,694 Congenital Heart Disease Trios. 2023 NHLBI Bench to Bassinet Research Program Annual Face-To-Face Conference, October 12, 2023, Rockville, MD
8. *#Poster*: Investigating Shared Genetic Causes of Heart and Brain Developmental Abnormalities. 2023 NHLBI Bench to Bassinet Research Program Annual Face-To-Face Conference, October 12, 2023, Rockville, MD
9. *#Featured Plenary Abstract Session*: Large-Scale Genomic Analysis and Targeted Functional Studies Uncover Disease-Associated Uniparental Disomy in Congenital Heart Disease. 2024 Annual Meeting of the American Society of Human Genetics, November 5, 2024, Denver, CO
10. *#Selected Platform Talk*: Contribution of Uniparental Disomy to Congenital Heart Disease in 3,869 Trios. 2024 International Joint Conference with the Korean Society for Medical Genetics and Genomics and the East Asian Union of Human Genetics Societies, December 5, 2024, Seoul, Korea
11. *#Poster*: Uncovering the molecular signatures of idiopathic peripheral neuropathy. 2025 Annual Hope Center Retreat, May 13, 2025, St. Louis, MO
12. *#Selected Lighting Talk*: A Comprehensive Benchmarking Resource for Somatic Variant Detection in HapMap Mixtures using Human Pangenome Graphs: 2025 SMAHT Annual Meeting, June 9, 2025, Bethesda, MD
13. *#Poster*: A Comprehensive Benchmarking Resource for Somatic Variant Detection in HapMap Mixtures using Human Pangenome Graphs. 2025 SMAHT Annual Meeting, June 9, 2025, Bethesda, MD
14. *#Poster*: Integrative Genomic Analysis Reveals Candidate Mitochondrial-Localized DNA variants in Idiopathic Peripheral Neuropathy. 2025UMDF's Mitochondrial Medicine Conference, June 18, 2025, St. Louis, MO
15. *#Poster*: Whole-Genome Identification of Short Tandem Repeats Underlying Idiopathic Peripheral Neuropathy Using Long-Read and Short-Read Sequencing: 2024 Annual Meeting of the American Society of Human Genetics, November 7, 2024, Denver, CO
16. *#Poster*: A Comprehensive Benchmarking Resource for Somatic Variant Detection in HapMap Mixtures using Human Pangenome Graphs. 2025 Annual Meeting of the American Society of Human Genetics, Boston, MA

17. **#Poster:** Repeat expansions in RFC1, BEAN1 and STARD7 contribute to idiopathic peripheral neuropathy. 2025 Annual Meeting of the American Society of Human Genetics, Boston, MA
18. **#Poster:** High-Throughput Proteomic Analysis Reveals Actin-Depolymerizing Factor and Complement Proteins as Biomarkers in Idiopathic Peripheral Neuropathy. 2025 Annual Meeting of the American Society of Human Genetics, Boston, MA
19. **#Poster:** Investigating the Role of De Novo Single Nucleotide and Structural Variants in Congenital Hydrocephalus. 2026 St. Jude National Graduate Student Symposium, Memphis, TN

Preprints and Submitted Manuscripts:

1. **#Kong N***, Abello J*, Yoon CJ*, **Ruttenberg A**, **Li Z**, Richee J, Colijn S, Bowling KM, Wilke MVMB, Dong W, Ng K, **Mehinovic E**, **Patel P**, DePalma SR, **Wang Y-C**, Wijerathne TD, Lacroix JJ, Zhao Y, Sah R, Nourse JL, Pathak M, Ensing J, Grainger S, Yost HJ, Tristani-Firouzi M, Wagner M, Ollberding NJ, Seidman J, Morton SU, Gelb BD, Chung WK, Lifton RP, Sun Y, Edwards JR, Dutcher S, Seidman CE, Griffith OL, Griffith M, Schedl T, Lek M, Bruecker M, Stratman AN#, **Jin SC**#. Uniparental disomy reveals hidden genetic causes of congenital heart disease. *Under review* (<https://www.researchsquare.com/article/rs-10233423/v1>)
2. **#Bisarad P***, **Wang Y-C***, Skidmor PT, Galaz-Montoya CI, Lewis SA, Alhaddad B, **Kong N**, Julian D, Magee H, Kruer TN, Xie Y, Zheng W, Li B, Rajabpour FV, Liu J, Revanur A, Bakur K, Firouzabadi SG, Sharbatkhori S, Tafakhori A, Taghiabadi E, Nezaminargabad E, Vosoogh S, Jamshidi J, Arefnia S, Hosseini SA, Khajehmirzaei A, Jamali F, Ahmadifard A, Khodadadi H, Daneshmand P, Bohlega S, Maddirevula S, Nadeef SS, Hashem MO, Salih MA, Mohamed IN, Sticht H, Morias SP, Damásio J, Santos M, Loureiro JL, Rodrigues R, Stevanin G, Benkirane M, Dauriat B, Head N, Baptista J, Shahhosseini S, Mohammad F, Zhao H, Padilla-Lopez S, Alkuraya F, Bakhtiari S, Kruer MC#, **Jin SC**#, Darvish H#. Recessive genomic and phenotypic variation in consanguineous families with cerebral palsy. *medRxiv* (<https://www.medrxiv.org/content/10.1101/2025.11.04.25339178v1>) 2025
3. The Somatic Mosaicism across Human Tissues Network (SMaHT). Comprehensive benchmarking of somatic mutation detection by the SMaHT Network. *bioRxiv* (<https://www.biorxiv.org/content/10.1101/2025.10.09.678885v1>)
4. **#Casey E***, Luc E*, **Li Z***, **Ma A***, **Yu B***, **Patel P***, Touma T#, Stratman NA#, **Jin SC**#. Somatic Mosaicism in Cardiovascular Disease: Integrating Genomics, Function, and Clinical Translation. *Under review*
5. **#Dong W**, Nichols JE, **Mehinovic E**, Strickland A, Khanbabaev A, Sasaki Y, **Jin SC**#, Milbrandt J#. Peripheral Nerve Injury Engages Transcript Isoform Remodeling to Coordinate Cellular and Extracellular Response. *Under review*
6. Li Q*, Dennis E*, Allington G*, Fan B, Mekbib KY, Mehta NH, Davalan WC, Duy PQ, Hale AT, DeSpensa T, Kundishora AJ, Fortes C, Nelson-Williams C, Haider S, Wojtkiewicz GR, Nanda P, Muñoz W, Butler WE, Alper SL, Gunel M, Lifton RP, **Jin SC**, McGee S, Kahle KT. Genetic disruption of cerebellar developmental scaling in Chiari I malformation. *Under review*