University of Pittsburgh
School of Medicine
BIOGRAPHICAL

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EDUCATION and TRAINING

UNDERGRADUATE

1999-2003	Nanjing University, Nanjing, China	B.S., 2003	Mathematics

GRADUATE

2003-2006	Michigan State University, East Lansing, MI	M.S., 2006	Mathematics
2006-2011	University of Michigan, Ann Arbor, MI	Ph.D., 2011 Mentor: Gonçalo Abecasis	Biostatistics

APPOINTMENTS and POSITIONS

8/2011-1/2017	Department of Pediatrics, School of Medicine, University of Pittsburgh, Pittsburgh, PA, USA	Assistant Professor
12/2013-1/2017	Department of Biostatistics	Assistant Professor Secondary
12/2013-1/2017	Department of Human Genetics	Assistant Professor Secondary
5/2014-Present	University of Pittsburgh	Graduate Faculty
2/2017-07/2021	Department of Pediatrics	Associate Professor with Tenure
2/2017-07/2021	Department of Biostatistics	Associate Professor Secondary

2/2017-07/2021	Department of Human Genetics	Associate Professor Secondary
6/2017-Present	Department of Pediatrics	Director of Statistical Genetics Core
08/2021-Present	Department of Pediatrics	Professor with Tenure
01/2022-Present	Department of Biomedical Engineering Carnegie Mellon University	Adjunct Professor

MEMBERSHIP in PROFESSIONAL and SCIENTIFIC SOCIETIES

Mathematical Association of America	2005
American Society of Human Genetics	2007-Present
American Statistical Association	2009-Present
Eastern North American Region Biometric Society	2009-Present
American Thoracic Society	2017-Present
Chinese American Lung Association	2017-Present

HONORS

Rackham Conference Travel Grant, University of Michigan	2008
ENAR Diversity Travel Grant	2009
ASHG Trainee Research Semifinalist Award	2010
Eminent Scholar Talk, International Conference on Intelligent Biology and Medicine, Philadelphia, Pennsylvania, USA	2021
American Thoracic Society Fellow (ATSF)	2023
Pediatric Discovery Award, UPMC Children's Hospital of Pittsburgh	2025

1. ORIGINAL PEER REVIEWED ARTICLES

* indicates co-first author;
# indicates (co-)senior/corresponding author;

1. Dixon AL, Liang L, Moffatt MF, **Chen W**, Heath S, Wong KC, Taylor J, Burnett E, Gut I, Farrall M, Lathrop GM, Abecasis GR, Cookson WO. A genome-wide association study of

global gene expression. *Nature Genetics*. 2007;39(10):1202-7. doi: 10.1038/ng2109. Epub 2007 Sep 16. PubMed PMID: 17873877.

2. Kanda A[*], **Chen W**[*], Othman M, Branham KE, Brooks M, Khanna R, He S, Lyons R, Abecasis GR, Swaroop A. A variant of mitochondrial protein LOC387715/ARMS2, not HTRA1, is strongly associated with age-related macular degeneration. *Proceedings of the National Academy of Sciences of the United States of America* 2007;104(41):16227-32. doi: 10.1073/pnas.0703933104. Epub 2007 Sep 20. PubMed PMID: 17884985; PMCID: PMC1987388.

3. Swaroop A, Branham KE, **Chen W**, Abecasis G. Genetic susceptibility to age-related macular degeneration: a paradigm for dissecting complex disease traits. *Human Molecular Genetics*. 2007;16 Spec No. 2(Spec No. 2):R174-82. doi: 10.1093/hmg/ddm212. Review. PubMed PMID: 17911160.

4. **Chen W**[#], Liang L, Abecasis GR. GWAS GUI: graphical browser for the results of whole-genome association studies with high-dimensional phenotypes. *Bioinformatics (Oxford, England)*. 2009;25(2):284-5. doi: 10.1093/bioinformatics/btn600. Epub 2008 Nov 20. PubMed PMID: 19028721; PMCID: PMC2732294.

5. Baratz KH, Tosakulwong N, Ryu E, Brown WL, Branham K, **Chen W**, Tran KD, Schmid-Kubista KE, Heckenlively JR, Swaroop A, Abecasis G, Bailey KR, Edwards AO. E2-2 protein and Fuchs's corneal dystrophy. *The New England Journal of Medicine*. 2010;363(11):1016-24. doi: 10.1056/NEJMoa1007064. Epub 2010 Aug 25. PubMed PMID: 20825314; NIHMSID:NIHMS235518.

6. **Chen W**, Stambolian D, Edwards AO, Branham KE, Othman M, Jakobsdottir J, Tosakulwong N, Pericak-Vance MA, Campochiaro PA, Klein ML, Tan PL, Conley YP, Kanda A, Kopplin L, Li Y, Augustaitis KJ, Karoukis AJ, Scott WK, Agarwal A, Kovach JL, Schwartz SG, Postel EA, Brooks M, Baratz KH, Brown WL, Complications of Age-Related Macular Degeneration Prevention Trial Research G, Brucker AJ, Orlin A, Brown G, Ho A, Regillo C, Donoso L, Tian L, Kaderli B, Hadley D, Hagstrom SA, Peachey NS, Klein R, Klein BE, Gotoh N, Yamashiro K, Ferris Iii F, Fagerness JA, Reynolds R, Farrer LA, Kim IK, Miller JW, Corton M, Carracedo A, Sanchez-Salorio M, Pugh EW, Doheny KF, Brion M, Deangelis MM, Weeks DE, Zack DJ, Chew EY, Heckenlively JR, Yoshimura N, Iyengar SK, Francis PJ, Katsanis N, Seddon JM, Haines JL, Gorin MB, Abecasis GR, Swaroop A. Genetic variants near TIMP3 and high-density lipoprotein-associated loci influence susceptibility to age-related macular degeneration. *Proceedings of the National Academy of Sciences of the United States of America.* 2010 Sep 9;363(11):1016-24. doi: 10.1056/NEJMoa1007064. Epub 2010 Aug 25. PubMed PMID: 20825314; NIHMSID:NIHMS235518.

7. Ding J, Gudjonsson JE, Liang L, Stuart PE, Li Y, **Chen W**, Weichenthal M, Ellinghaus E, Franke A, Cookson W, Nair RP, Elder JT, Abecasis GR. Gene expression in skin and lymphoblastoid cells: Refined statistical method reveals extensive overlap in cis-eQTL signals. *American Journal of Human Genetics*. 2010 Dec 10;87(6):779-89. doi: 10.1016/j.ajhg.2010.10.024. PubMed PMID: 21129726; PubMed Central PMCID: PMC2997368.

8. **1000 Genomes Project**, Abecasis GR, Altshuler D, Auton A, Brooks LD, Durbin RM, Gibbs RA, Hurles ME, McVean GA. A map of human genome variation from population-scale

sequencing. *Nature*. 2010 Oct 28;467(7319):1061-73. doi: 10.1038/nature09534. PubMed PMID: 20981092; PubMed Central PMCID: PMC3042601.

9. Kanda A, Stambolian D, **Chen W**, Curcio CA, Abecasis GR, Swaroop A. Age-related macular degeneration-associated variants at chromosome 10q26 do not significantly alter ARMS2 and HTRA1 transcript levels in the human retina. *Molecular Vision*. 2010 Jul 15;16:1317-23. PubMed PMID: 20664794; PubMed Central PMCID: PMC2905635.

10. Peng J, Wang Z, **Chen W**, Ding Y, Wang H, Huang H, Huang W, Cai S. Integration of genetic signature and TNM staging system for predicting the relapse of locally advanced colorectal cancer. *International Journal of Colorectal Disease*. 2010 Nov;25(11):1277-85. doi: 10.1007/s00384-010-1043-1. Epub 2010 Aug 13. PubMed PMID: 20706727.

11. Sudmant PH, Kitzman JO, Antonacci F, Alkan C, Malig M, Tsalenko A, Sampas N, Bruhn L, Shendure J, **1000 Genomes Project**, Eichler EE. Diversity of human copy number variation and multicopy genes. *Science (New York, NY)*. 2010 Oct 29;330(6004):641-6. doi: 10.1126/science.1197005. PubMed PMID: 21030649; PubMed Central PMCID: PMC3020103.

12. Danecek P, Auton A, Abecasis G, Albers CA, Banks E, DePristo MA, Handsaker RE, Lunter G, Marth GT, Sherry ST, McVean G, Durbin R, **Genomes Project Analysis Group**. The variant call format and VCFtools. *Bioinformatics (Oxford, England)*. 2011 Aug 1;27(15):2156-8. doi: 10.1093/bioinformatics/btr330. Epub 2011 Jun 7. PubMed PMID: 21653522; PubMed Central PMCID: PMC3137218.

13. Gravel S, Henn BM, Gutenkunst RN, Indap AR, Marth GT, Clark AG, Yu F, Gibbs RA, Bustamante CD, **The 1000 Genomes Project**. Demographic history and rare allele sharing among human populations. *Proceedings of the National Academy of Sciences of the United States of America*. 2011 Jul 19;108(29):11983-8. doi: 10.1073/pnas.1019276108. Epub 2011 Jul 5. PubMed PMID: 21730125; PubMed Central PMCID: PMC3142009.

14. Kunju LP, Cookingham C, Toy KA, **Chen W**, Sabel MS, Kleer CG. EZH2 and ALDH-1 mark breast epithelium at risk for breast cancer development. *Modern Pathology*. 2011 Jun;24(6):786-93. doi: 10.1038/modpathol.2011.8. Epub 2011 Mar 11. PubMed PMID: 21399615; PubMed Central PMCID: PMC3106137.

15. Marth GT, Yu F, Indap AR, Garimella K, Gravel S, Leong WF, Tyler-Smith C, Bainbridge M, Blackwell T, Zheng-Bradley X, Chen Y, Challis D, Clarke L, Ball EV, Cibulskis K, Cooper DN, Fulton B, Hartl C, Koboldt D, Muzny D, Smith R, Sougnez C, Stewart C, Ward A, Yu J, Xue Y, Altshuler D, Bustamante CD, Clark AG, Daly M, DePristo M, Flicek P, Gabriel S, Mardis E, Palotie A, Gibbs R, **1000 Genomes Project**. The functional spectrum of low-frequency coding variation. *Genome Biology*. 2011 Sep 14;12(9):R84. doi: 10.1186/gb-2011-12-9-r84. PubMed PMID: 21917140; PubMed Central PMCID: PMC3308047.

16. McKay GJ, Patterson CC, Chakravarthy U, Dasari S, Klaver CC, Vingerling JR, Ho L, de Jong PT, Fletcher AE, Young IS, Seland JH, Rahu M, Soubrane G, Tomazzoli L, Topouzis F, Vioque J, Hingorani AD, Sofat R, Dean M, Sawitzke J, Seddon JM, Peter I, Webster AR, Moore AT, Yates JR, Cipriani V, Fritsche LG, Weber BH, Keilhauer CN, Lotery AJ, Ennis S, Klein ML, Francis PJ, Stambolian D, Orlin A, Gorin MB, Weeks DE, Kuo CL, Swaroop A, Othman M, Kanda A, **Chen W**, Abecasis GR, Wright AF, Hayward C, Baird PN, Guymer

RH, Attia J, Thakkinstian A, Silvestri G. Evidence of association of APOE with age-related macular degeneration: a pooled analysis of 15 studies. *Human Mutation*. 2011 Dec;32(12):1407-16. doi: 10.1002/humu.21577. Epub 2011 Sep 12. PubMed PMID: 21882290; PubMed Central PMCID: PMC3217135.

17. McKay GJ, Silvestri G, Chakravarthy U, Dasari S, Fritsche LG, Weber BH, Keilhauer CN, Klein ML, Francis PJ, Klaver CC, Vingerling JR, Ho L, De Jong PT, Dean M, Sawitzke J, Baird PN, Guymer RH, Stambolian D, Orlin A, Seddon JM, Peter I, Wright AF, Hayward C, Lotery AJ, Ennis S, Gorin MB, Weeks DE, Kuo CL, Hingorani AD, Sofat R, Cipriani V, Swaroop A, Othman M, Kanda A, **Chen W**, Abecasis GR, Yates JR, Webster AR, Moore AT, Seland JH, Rahu M, Soubrane G, Tomazzoli L, Topouzis F, Vioque J, Young IS, Fletcher AE, Patterson CC. Variations in apolipoprotein E frequency with age in a pooled analysis of a large group of older people. *American Journal of Epidemiology*. 2011 Jun 15;173(12):1357-64. doi: 10.1093/aje/kwr015. Epub 2011 Apr 15. Review. PubMed PMID: 21498624; PubMed Central PMCID: PMC3145394.

18. Mills RE, Walter K, Stewart C, Handsaker RE, Chen K, Alkan C, Abyzov A, Yoon SC, Ye K, Cheetham RK, Chinwalla A, Conrad DF, Fu Y, Grubert F, Hajirasouliha I, Hormozdiari F, Iakoucheva LM, Iqbal Z, Kang S, Kidd JM, Konkel MK, Korn J, Khurana E, Kural D, Lam HY, Leng J, Li R, Li Y, Lin CY, Luo R, Mu XJ, Nemesh J, Peckham HE, Rausch T, Scally A, Shi X, Stromberg MP, Stutz AM, Urban AE, Walker JA, Wu J, Zhang Y, Zhang ZD, Batzer MA, Ding L, Marth GT, McVean G, Sebat J, Snyder M, Wang J, Ye K, Eichler EE, Gerstein MB, Hurles ME, Lee C, McCarroll SA, Korbel JO, **1000 Genomes Project**. Mapping copy number variation by population-scale genome sequencing. *Nature*. 2011 Feb 3;470(7332):59-65. doi: 10.1038/nature09708. PubMed PMID: 21293372; PubMed Central PMCID: PMC3077050.

19. Peng J, **Chen W**, Sheng W, Xu Y, Cai G, Huang D, Cai S. Oncological outcome of T1 rectal cancer undergoing standard resection and local excision. *Colorectal Disease: the Official Journal of the Association of Coloproctology of Great Britain and Ireland*. 2011 Feb;13(2):150-3. doi: 10.1111/j.1463-1318.2009.02090.x. PubMed PMID: 19863599.

20. Peng J, **Chen W**, Venook AP, Sheng W, Xu Y, Guan Z, Cai G, Cai S. Long-term outcome of early-stage rectal cancer undergoing standard resection and local excision. *Clinical Colorectal Cancer*. 2011 Mar 1;10(1):37-41. doi: 10.3816/CCC.2011.n.005. PubMed PMID: 21609934.

21. Sivakumaran TA, Igo RP, Jr., Kidd JM, Itsara A, Kopplin LJ, **Chen W**, Hagstrom SA, Peachey NS, Francis PJ, Klein ML, Chew EY, Ramprasad VL, Tay WT, Mitchell P, Seielstad M, Stambolian DE, Edwards AO, Lee KE, Leontiev DV, Jun G, Wang Y, Tian L, Qiu F, Henning AK, LaFramboise T, Sen P, Aarthi M, George R, Raman R, Das MK, Vijaya L, Kumaramanickavel G, Wong TY, Swaroop A, Abecasis GR, Klein R, Klein BE, Nickerson DA, Eichler EE, Iyengar SK. A 32 kb critical region excluding Y402H in CFH mediates risk for age-related macular degeneration. *PloS One*. 2011;6(10):e25598. doi: 10.1371/journal.pone.0025598. Epub 2011 Oct 12. PubMed PMID: 22022419; PubMed Central PMCID: PMC3192039.

22. Stanton CM, Yates JR, den Hollander AI, Seddon JM, Swaroop A, Stambolian D, Fauser S, Hoyng C, Yu Y, Atsuhiro K, Branham K, Othman M, **Chen W**, Kortvely E, Chalmers K, Hayward C, Moore AT, Dhillon B, Ueffing M, Wright AF. Complement factor D in age-

related macular degeneration. *Investigative Ophthalmology & Visual Science*. 2011 Nov 11;52(12):8828-34. doi: 10.1167/iovs.11-7933. PubMed PMID: 22003108; PubMed Central PMCID: PMC3230905.

23. Wang M, Peng J, Yang W, **Chen W**, Mo S, Cai S. Prognostic analysis for carcinoid tumours of the rectum: a single institutional analysis of 106 patients. *Colorectal disease: the Official Journal of the Association of Coloproctology of Great Britain and Ireland*. 2011 Feb;13(2):150-3. doi: 10.1111/j.1463-1318.2009.02090.x. PubMed PMID: 19863599.

24. Clarke L, Zheng-Bradley X, Smith R, Kulesha E, Xiao C, Toneva I, Vaughan B, Preuss D, Leinonen R, Shumway M, Sherry S, Flicek P, **The 1000 Genomes Project**. The 1000 Genomes Project: data management and community access. *Nature Methods*. 2012 Apr 27;9(5):459-62. doi: 10.1038/nmeth.1974. PubMed PMID: 22543379; PubMed Central PMCID: PMC3340611.

25. Li B, **Chen W**, Zhan X, Busonero F, Sanna S, Sidore C, Cucca F, Kang HM, Abecasis GR. A likelihood-based framework for variant calling and de novo mutation detection in families. *PLoS Genetics*. 2012;8(10):e1002944. doi: 10.1371/journal.pgen.1002944. Epub 2012 Oct 4. PubMed PMID: 23055937; PubMed Central PMCID: PMC3464213.

26. **Chen W**, Li B, Zeng Z, Sanna S, Sidore C, Busonero F, Kang HM, Li Y, Abecasis GR. Genotype calling and haplotyping in parent-offspring trios. *Genome Research.* 2013 Jan;23(1):142-51. doi: 10.1101/gr.142455.112. Epub 2012 Oct 11. PubMed PMID: 23064751; PubMed Central PMCID: PMC3530674.

27. **Chen W**, Boutaoui N, Brehm JM, Han YY, Schmitz C, Cressley A, Acosta-Perez E, Alvarez M, Colon-Semidey A, Baccarelli AA, Weeks DE, Kolls JK, Canino G, Celedon JC. ADCYAP1R1 and asthma in Puerto Rican children. *American Journal of Respiratory and Critical Care Medicine*. 2013 Mar 15;187(6):584-8. doi: 10.1164/rccm.201210-1789OC. Epub 2013 Jan 17. PubMed PMID: 23328528; PubMed Central PMCID: PMC3733434.

28. **Chen W**[#], Li B, Zeng Z, Sanna S, Sidore C, Busonero F, Kang HM, Li Y, Abecasis GR. Genotype calling and haplotyping in parent-offspring trios. *Genome Research*. 2013;23(1):142-51. PubMed PMID: 23064751; PMCID: PMC3530674.

29. Fritsche LG[*], **Chen W**[*], Schu M, Yaspan BL, Yu Y, Thorleifsson G, Zack DJ, Arakawa S, Cipriani V, Ripke S, Igo RP, Jr., Buitendijk GH, Sim X, Weeks DE, Guymer RH, Merriam JE, Francis PJ, Hannum G, Agarwal A, Armbrecht AM, Audo I, Aung T, Barile GR, Benchaboune M, Bird AC, Bishop PN, Branham KE, Brooks M, Brucker AJ, Cade WH, Cain MS, Campochiaro PA, Chan CC, Cheng CY, Chew EY, Chin KA, Chowers I, Clayton DG, Cojocaru R, Conley YP, Cornes BK, Daly MJ, Dhillon B, Edwards AO, Evangelou E, Fagerness J, Ferreyra HA, Friedman JS, Geirsdottir A, George RJ, Gieger C, Gupta N, Hagstrom SA, Harding SP, …, Gorin MB, Wang JJ, Klaver CC, Seddon JM, Pericak-Vance MA, Iyengar SK, Yates JR, Swaroop A, Weber BH, Kubo M, Deangelis MM, Leveillard T, Thorsteinsdottir U, Haines JL, Farrer LA, Heid IM, Abecasis GR, Consortium AMDG. Seven new loci associated with age-related macular degeneration. *Nature Genetics*. 2013 Apr;45(4):433-9, 439e1-2. doi: 10.1038/ng.2578. Epub 2013 Mar 3. PubMed PMID: 23455636; PubMed Central PMCID: PMC3739472.

30. Li Y, **Chen W**, Liu EY, Zhou YH. Single Nucleotide Polymorphism (SNP) Detection and Genotype Calling from Massively Parallel Sequencing (MPS) Data. *Statistics in*

Biosciences. 2013 May;5(1):3-25. doi: 10.1007/s12561-012-9067-4. PubMed PMID: 24489615; PubMed Central PMCID: PMC3905464.

31. Sharma NK, Gupta A, Prabhakar S, Singh R, Sharma SK, **Chen W**, Anand A. Association between CFH Y402H polymorphism and age related macular degeneration in North Indian cohort. *PLoS One*. 2013;8(7):e70193. doi: 10.1371/journal.pone.0070193. Print 2013. PubMed PMID: 23922956; PubMed Central PMCID: PMC3726372.

32. Anand A, Sharma K, **Chen W**, Sharma NK. Using current data to define new approach in age related macular degeneration: need to accelerate translational research. *Current Genomics*. 2014 Aug;15(4):266-77. doi: 10.2174/1389202915666140516204512. PubMed PMID: 25132797; PubMed Central PMCID: PMC4133950.

33. **Chen W**, Brehm JM, Boutaoui N, Soto-Quiros M, Avila L, Celli BR, Bruse S, Tesfaigzi Y, Celedon JC. Native American ancestry, lung function, and COPD in Costa Ricans. *Chest*. 2014 Apr;145(4):704-710. doi: 10.1378/chest.13-1308. PubMed PMID: 24306962; PubMed Central PMCID: PMC3971968.

34. Ozel AB, Moroi SE, Reed DM, Nika M, Schmidt CM, Akbari S, Scott K, Rozsa F, Pawar H, Musch DC, Lichter PR, Gaasterland D, Branham K, Gilbert J, Garnai SJ, **Chen W**, Othman M, Heckenlively J, Swaroop A, Abecasis G, Friedman DS, Zack D, Ashley-Koch A, Ulmer M, Kang JH, Consortium N, Liu Y, Yaspan BL, Haines J, Allingham RR, Hauser MA, Pasquale L, Wiggs J, Richards JE, Li JZ. Genome-wide association study and meta-analysis of intraocular pressure. *Human Genetics*. 2014 Jan;133(1):41-57. doi: 10.1007/s00439-013-1349-5. Epub 2013 Sep 4. PubMed PMID: 24002674; PubMed Central PMCID: PMC3982323.

35. Banik A, Brown RE, Bamburg J, Lahiri DK, Khurana D, Friedland RP, **Chen W**, Ding Y, Mudher A, Padjen AL, Mukaetova-Ladinska E, Ihara M, Srivastava S, Padma Srivastava MV, Masters CL, Kalaria RN, Anand A. Translation of Pre-Clinical Studies into Successful Clinical Trials for Alzheimer's Disease: What are the Roadblocks and How Can They Be Overcome? *Journal of Alzheimer's Disease: JAD*. 2015;47(4):815-43. doi: 10.3233/JAD-150136. Review. PubMed PMID: 26401762.

36. Brehm JM, Man Tse S, Croteau-Chonka DC, Forno E, Litonjua AA, Raby BA, **Chen W**, Yan Q, Boutaoui N, Acosta-Perez E, Avila L, Weiss ST, Soto-Quiros M, Cloutier MM, Hu D, Pino-Yanes M, Wenzel SE, Spear ML, Kolls JK, Burchard EG, Canino G, Celedon JC. A Genome-Wide Association Study of Post-bronchodilator Lung Function in Children with Asthma. *American Journal of Respiratory and Critical Care Medicine*. 2015 Jul 1;192(1):47-56. doi: 10.1164/rccm.201501-0037OC. PubMed PMID: 25918834; PubMed Central PMCID: PMC4511425.

37. Brehm JM, Ramratnam SK, Tse SM, Croteau-Chonka DC, Pino-Yanes M, Rosas-Salazar C, Litonjua AA, Raby BA, Boutaoui N, Han YY, **Chen W**, Forno E, Marsland AL, Nugent NR, Eng C, Colon-Semidey A, Alvarez M, Acosta-Perez E, Spear ML, Martinez FD, Avila L, Weiss ST, Soto-Quiros M, Ober C, Nicolae DL, Barnes KC, Lemanske RF, Jr., Strunk RC, Liu A, London SJ, Gilliland F, Sleiman P, March M, Hakonarson H, Duan QL, Kolls JK, Fritz GK, Hu D, Fani N, Stevens JS, Almli LM, Burchard EG, Shin J, McQuaid EL, Ressler K, Canino G, Celedon JC. Stress and Bronchodilator Response in Children with Asthma. *American*

Journal of Respiratory and Critical Care Medicine. 2015;192(1):47-56. PubMed PMID: 25918834; PMCID: PMC4511425.

38. Chen R, Wei Q, Zhan X, Zhong X, Sutcliffe JS, Cox NJ, Cook EH, Li C, **Chen W**[#], Li B[#]. A haplotype-based framework for group-wise transmission/disequilibrium tests for rare variant association analysis. *Bioinformatics (Oxford, England)*. 2015 May 1;31(9):1452-9. doi: 10.1093/bioinformatics/btu860. Epub 2015 Jan 6. PubMed PMID: 25568282; PubMed Central PMCID: PMC4410665.

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40. **Chen W**, Brehm JM, Manichaikul A, Cho MH, Boutaoui N, Yan Q, Burkart KM, Enright PL, Rotter JI, Petersen H, Leng S, Obeidat M, Bosse Y, Brandsma CA, Hao K, Rich SS, Powell R, Avila L, Soto-Quiros M, Silverman EK, Tesfaigzi Y, Barr RG, Celedon JC. A genome-wide association study of chronic obstructive pulmonary disease in Hispanics. *Annals of the American Thoracic Society*. 2015 Mar;12(3):340-8. doi: 10.1513/AnnalsATS.201408-380OC. PubMed PMID: 25584925; PubMed Central PMCID: PMC4418314.

41. Fan R, Wang Y, Boehnke M, **Chen W**, Li Y, Ren H, Lobach I, Xiong M. Gene Level Meta-Analysis of Quantitative Traits by Functional Linear Models. *Genetics*. 2015 Aug;200(4):1089-104. doi: 10.1534/genetics.115.178343. Epub 2015 Jun 9. PubMed PMID: 26058849; PubMed Central PMCID: PMC4574252.

42. **1000 Genomes Project**, Auton A, Brooks LD, Durbin RM, Garrison EP, Kang HM, Korbel JO, Marchini JL, McCarthy S, McVean GA, Abecasis GR. A global reference for human genetic variation. *Nature*. 2015 Oct 1;526(7571):68-74. doi: 10.1038/nature15393. PubMed PMID: 26432245; PubMed Central PMCID: PMC4750478.

43. Li B, Wei Q, Zhan X, Zhong X, **Chen W**, Li C, Haines J. Leveraging Identity-by-Descent for Accurate Genotype Inference in Family Sequencing Data. *PLoS Genetics*. 2015 Jun;11(6):e1005271. doi: 10.1371/journal.pgen.1005271. eCollection 2015 Jun. PubMed PMID: 26043085; PubMed Central PMCID: PMC4456389.

44. Ray M, Horne W, McAleer JP, Ricks DM, Kreindler JL, Fitzsimons MS, Chan PP, Trevejo-Nunez G, Chen K, Fajt M, **Chen W**, Ray A, Wenzel S, Kolls JK. RNA-seq in Pulmonary Medicine: How Much Is Enough? *American Journal of Respiratory and Critical Care Medicine*. 2015 Aug 1;192(3):389-91. doi: 10.1164/rccm.201403-0475LE. PubMed PMID: 26230238; PubMed Central PMCID: PMC4584249.

45. Wang T, Guan W, Lin J, Boutaoui N, Canino G, Luo J, Celedon JC, **Chen W**[#]. A systematic study of normalization methods for Infinium 450K methylation data using whole-genome bisulfite sequencing data. *Epigenetics*. 2015;10(7):662-9. doi: 10.1080/15592294.2015.1057384. PubMed PMID: 26036609; PubMed Central PMCID: PMC4623491.

46. Wei Q, Zhan X, Zhong X, Liu Y, Han Y, **Chen W**, Li B. A Bayesian framework for de novo mutation calling in parents-offspring trios. *Bioinformatics (Oxford, England)*. 2015 May 1;31(9):1375-81. doi: 10.1093/bioinformatics/btu839. Epub 2014 Dec 21. PubMed PMID: 25535243; PubMed Central PMCID: PMC4410659.

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179. Gaietto K, Yue M, Han YY, Rosser FJ, Canino G, Forno E, **Chen W**, Celedón JC. Exposure to Violence and Asthma Endotypes in Puerto Rican Youth. *Ann Am Thorac Soc*. 2025 Jun 23;. doi: 10.1513/AnnalsATS.202502-151OC. [Epub ahead of print] PubMed PMID: 40548909.

180. Han YY, Gaietto K, **Chen W**, Perreira KM, Oren E, Pirzada A, Garcia-Bedoya O, Kaplan R, Isasi CR, Celedón JC. Life Stressors, Resilience Resources, and Asthma Among Adults in the Hispanic Community Health Study/Study of Latinos. *J Allergy Clin Immunol Pract*. 2025 Jun;13(6):1375-1384.e7. doi: 10.1016/j.jaip.2025.02.031. Epub 2025 Mar 7. PubMed PMID: 40057187; PubMed Central PMCID: PMC12146061.

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10.1172/jci.insight.185061. eCollection 2025 Apr 22. PubMed PMID: 40048261; PubMed Central PMCID: PMC12016929.

182. Chen T, Hughes J, Gregory A, Conroy J, Loughran P, Song J, **Chen W**, Billiar T. Single-cell transcriptomic analysis identified resistant MDSCs and a stress-tolerant gene co-expression network as common MDSC features across multiple disease settings. _Front Immunol_. 2025;16:1565211. doi: 10.3389/fimmu.2025.1565211. eCollection 2025. PubMed PMID: 40264770; PubMed Central PMCID: PMC12011849.

183. Cai M, Zhao K, Huang P, Celedón JC, McKennan C, **Chen W**, Wang J. EMixed: Probabilistic Multi-Omics Cellular Deconvolution of Bulk Omics Data. _J Data Sci_. 2025 Feb 26:10.6339/25-jds1170. doi: 10.6339/25-jds1170. Online ahead of print. PMID: 41112940; PubMed Central PMCID: PMC12530062.

184. Yuan R, Rong Z, Hu H, Liu T, Tao S, **Chen W#**, Tang L#. Harmony-based data integration for distributed single-cell multi-omics data. _PLoS Comput Biol_. 2025 Sep 30;21(9):e1013526. doi: 10.1371/journal.pcbi.1013526. eCollection 2025 Sep. PMID: 41026785; PubMed Central PMCID: PMC12513639.

185. **Chen W#**, Baldoni PL, Zhou AX. From Splicing Landscape to Therapeutic Targets: Long-Read Sequencing in Non-Small-Cell Lung Cancer. _Am J Respir Cell Mol Biol_. 2025 Sep 25. doi: 10.1165/rcmb.2025-0483ED. Online ahead of print. PMID: 40996821.

186. Yue M, Cai M, Zhao C, Liu J, Gairlto K, Tao S, Hu H, Chen Y, Ding Y, Huang H, Celedón JC, Wang J, **Chen W#**. MOFUN-CCC: A Multi-Omics Intermediate Fusion Network for Digital White Blood Cell Count Prediction. _Genomics, Proteomics & Bioinformatics_. 2025. Accepted.

187. Liu T, Miller LM, Dresden BP, Zhao C, **Chen W#**, Alcorn JF#. Influenza Virus, Staphylococcus aureus Super-infection Disrupts Spatially Coordinated Cellular Immunity in the Lung. _Commun Biol_. 2025. Accepted.

Most updated publications can be found in
https://www.ncbi.nlm.nih.gov/myncbi/1BiLmrlnjqUQE/bibliography/public/

2. SELECTED SOFTWARE

1. COMPOSITE: A unified framework for doublet detection in single cell multi-omics data.
2. GMM-DEMUX: A Gaussian mixed model for sample demultiplexing.
3. BREMSC: A Bayesian Random Effects Model for single cell multi-omics data.
4. BAMMSC: A Bayesian mixture method for clustering population-based single cell.
5. SILGGM: Statistical inference library for graphical Gaussian model.
6. KMGene: Kernel machine methods for gene-based association analysis.
7. DIMMSC: A Dirichlet mixture model for clustering droplet-based single cell transcriptomic data.
8. FamLDCaller: A computational method for genotyping calling of sequence data from population and families.
9. FastGGM: An R package for efficiently studying conditional dependence among variables, which is well known as the Gaussian graphical model (GGM).

10. GWASGUI: A graphical overview of user-defined whole-genome association study with high-dimensional traits.
11. GTDT: A program with implementation of gene-based or group-wise TDT for rare variant aggregation analysis. Joint work with Dr. Bingshan Li.
12. LanceCheck: An efficient and memory saving program to check potential problematic lanes generated by shotgun sequencing machine and mapped by sequence assembler software.
13. LFKM: An R package using gene based kernel machine regression for quantitative traits in longitudinal family data.
14. MFKM: An R package using gene based kernel machine regression for quantitative traits in multivariate family data.
15. Polymutt: An efficient program implementing a likelihood-based framework for calling single nucleotide variants and detecting de novo point mutation events in families for next-generation sequencing data. Joint work with Dr. Bingshan Li.
16. SimuRare: Genetic Model-based Simulator to simulate case-control and quantitative data sets based on pre-defined genetic models.
17. SimuAdmix: A tool to simulate unrelated and family data set from multiple-way admixed population.
18. TrioCaller: A computational method for genotyping calling of sequence data trios.

Full software list can be found at http://www.pitt.edu/~wec47/software.html

3. BOOKS, BOOK CHAPTERS AND MONOGRAPHS
1. **Chen W**[#], Liu D, Fritsche L. Meta-analyses of Genome Wide Association Stuides. *Integrating Omics Data* Chapter 1. 2015. Cambridge University Press.
2. Yan Q, Ding Y, Weeks DE, **Chen W**[#]. AMD Genetics: Methods and Analyses for Association, Progression, and Prediction. *Advances in Experimental Medicine and Biology.* 2021;1256:191-200. Humana Press.
3. Jiang Y, Chen J, **Chen W**[#]. Controlling Batch Effect in Epigenome-Wide Association Study. *Epigenome-Wide Association Studies: Methods and Protocols* Chapter 7. *Methods in Molecular Biology.* Humana Press.
4. Jiang Y, Forno E, **Chen W**[#]. DNA Methylation and Atopic Diseases. *Epigenome-Wide Association Studies: Methods and Protocols.* Chapter 8. *Methods in Molecular Biology.*
5. Wang X, Hu H, **Chen W**[#]. Model-Based Clustering of Single-Cell Omics Data. *Handbook of Statistical Bioinformatics.* Chapter 5. 2023. Springer

4. Conference Abstract
I have published > 200 abstracts in multiple national and international conferences. Most of accepted abstracts have been published in peer-reviewed journals.

PROFESSIONAL ACTIVITIES
TEACHING

Graduate Student Teaching:

2012   Guest lecture for next-generation sequencing workshop, Department of Human Genetics, University of Pittsburgh, PA
One full day. Audience: 100-150 faculty, postdocs and students.

2013   Guest lecturer for BIOST 2055 "Introductory high-throughput genomic data analysis I: data mining and applications, Department of Biostatistics, University of Pittsburgh, PA
5 lectures. Audience: 10-15 PhD students.

2014   Guest lecturer for BIOST 2055 "Introductory high-throughput genomic data analysis I: data mining and applications, Department of Biostatistics, University of Pittsburgh, PA
4 lectures. Audience: 10-15 PhD students.

2014   Guest speaker for medical fellow research seminar "Introduction to Biostatistics in Clinical Research", Department of Pediatrics, University of Pittsburgh, PA
1 lecture. Audience: 20-25 faculty and fellow.

2015   Guest lecturer for BIOST 2055 "Introductory high-throughput genomic data analysis I: data mining and applications, Department of Biostatistics, University of Pittsburgh, PA
3 lectures. Audience: 10-15 PhD students.

2017   Guest lecturer for BIOST 2055 "Introductory high-throughput genomic data analysis I: data mining and applications, Department of Biostatistics, University of Pittsburgh, PA
3 lectures. Audience: 10-15 PhD students.

2017   Lecturer for Summer School, Center for Statistical Science, Tsinghua University, Beijing, China
4 lectures. Audience: 120 graduate students and junior faculty

2018   Guest lecturer for "Fundamentals of Bench Research" course, School of Medicine, University of Pittsburgh, PA
1 lecture. Audience: 10-15 medical fellows.

2019   Guest lecturer for "Fundamentals of Bench Research" course, School of Medicine, University of Pittsburgh, PA
1 lecture. Audience: 10-15 medical fellows.

2020   Guest lecturer for HuGen2080 "Statistical Genetics"

Graduate School of Public Health, University of Pittsburgh, PA
1 lecture. Audience: 10-15 PhD students.

2020   Lecturer for summer mini-workshop "Introduction to multi-omics analysis"
Department of Pediatrics, School of Medicine, University of Pittsburgh, PA
4 lectures. Audience: 10-15 PhD students from three departments.

2020   Guest Lecturer for BME 42-620 "Engineering Molecular Cell Biology", Department of Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA
1 lecture. Audience: 25 Graduate students

2020   Guest Lecturer for Biostat 2069 "Statistical Methods for Omics Data", Department of Biostatistics, Pittsburgh, PA
Two lectures. Audience: 20+ Graduate students

2021   Guest Lecturer for BME 42-620 "Engineering Molecular Cell Biology", Department of Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA
1 lecture. Audience: 25 Graduate students

2022   Guest Lecturer for BME 42-620 "Engineering Molecular Cell Biology", Department of Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA
1 lecture. Audience: 30 Graduate students

2023   Guest Lecturer for BME 42-620 "Engineering Molecular Cell Biology", Department of Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA
1 lecture. Audience: 30 Graduate students

2023   Guest lecture for Pitt Center for Research Computing workshop
1 3-hour lecture. Audience: 50 Graudate students and faculty

2024   Guest Lecturer for BME 42-620 "Engineering Molecular Cell Biology", Department of Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA
1 lecture. Audience: 30 Graduate students

MENTORING
Primary/Co-mentoring Advisor:

Date	Name	Position	Achievements/Current Position
2014	Lun-Ching Chang	PHD	Student of the Year, ASA Pittsburgh Chapter **Tenure Track Assistant Professor (TTAP), Florida Atlantic University**
2014	Shanshan Tu	Student Worker	
2014-2016	Daniel Hui	Student Worker	Chancellor's Undergraduate Fellowship, UPitt, Honors College Health Sciences Fellowship, UPitt
2014-2017	Qi Yan	Postdoctoral Fellow	CHP RAC Fellowship for Postdoc, **NIH K01 award**, **Tenure Track Assistant Professor, Columbia University**
2014-2017	Yi Liu	PHD, Graduate Student Research Assistant (GSRA)	Mihaela Serban Best Poster Award in ASA Pittsburgh Chapter Principle Statistician at Boehringer Ingelheim
2014-2018	Ting Wang	Postdoctoral Fellow	Research Scientist at Fred Hutchinson Cancer Research Center
2014-2018	Zhou (Ark) Fang	PHD, GSRA	Data Scientist at Google
2015-2016	Jerome Lin	GSRA	Bioinformatician at University of Pennsylvania
2016-2019	Zhe Sun	PHD, GSRA	2017-2018 CHP RAC Fellowship, ASHG Reviewer's Choice Poster, ENAR Best Student Paper Award, Outstanding Student Award from School of Public Health Research Scientist at Eli Lilly and Company
2017-2020	Rong Zhang	PHD, GSRA	Mellon Fellowship, ENAR Poster Winner, Biostatistics Manager at Amgen

2017-2018	Yusi Fang	GSRA	
2017-2019	Yale Jiang	Tsinghua-Pitt Joint Program	ATS Abstract Scholarship Award
2017-2019	Ge Yang	Xiangya-Pitt Joint Program	
2017-2020	Tao Sun	PHD, GSRA	2019 CTSI Young Investigator award, ENAR Best Student Paper Award, Student of the Year, ASA Pittsburgh Chapter, Outstanding Teaching Assistant Award, LiDS Best Poster Award, Travel Award by SAMSI, Travel Award to attend (iBRIGHT) conference, Best Presentation Award in the Annual Pitt Biostatistics Research Day, Inducted to the Delta Omega Honor Society **Tenure Track Assistant Professor, Renmin University of China**
2018-2019	Venkat Gella	Student Worker	
2018-2019	Minyue Liu	Student Worker	
2018-2020	Jianjiao Chen	Postdoctoral Fellow	
2018-2020	Hongyi Xin	Postdoctoral Fellow	ASHG Reviewer's Choice Poster/ **Associate Professor, Shanghai Jiao Tong University**
2018-present	Soyeon Kim	Postdoctoral Fellow	**NIH K01 award, Research Assistant Professor, University of Pittsburgh**
2018-2021	Yue Wei	PHD	LiDS Student Paper Award,

			Honorable Mentions for the Oral Presentation in the Annual Pitt Biostatistics Research Day
2018-2021	Tianmeng Chen	PHD	Instructor, University of Pittsburgh
2019-2022	Xinjun Wang	PHD, GSRA	Assistant Professor, MSKCC 2020 CTSI Young Investigator award, 2020-2021 CHP RAC Fellowship, ICSA 2020 student paper award, Student of the Year, ASA Pittsburgh Chapter
2019-present	Zhongli Xu	Tsinghua-Pitt Joint Program	ATS abstract scholarship ASHG Semifinalist
2019-present	Dhivyaa Rajasundaram	Research Assistant Professor	
2020-present	Franziska Rosser	Assistant Professor at CHP	**Pitt KL2 award**
2020-2023	Xueping Zhou	PHD	
2020-present	Jipeng Zhang	GSRA	
2020-present	Molin Yue	PHD and GSRA	ATS abstract scholarship 2022, 2023
2021-present	Haoran Hu	PHD and GSRA	
2022-2024	Ying-Ju Lai	GSRA	
2023-	Tianhao Liu	Tsinghua-Pitt Joint Program	
2023-	Ruizhi Yuan	PHD student	
2023-	Chongyue Zhao	Postdoctoral Fellow	
2024-	Shiyue Tao	PHD student and GSRA	

2024-	Jing Liu	T32 Postdoctoral Fellow
2024-	Xiangyu Ye	Postdoctoral Fellow

Thesis Committee Member

Date	Name	Position
2013	Umut Ozbek	Biostat PHD
2015	Zhen Zeng	Biostat PHD
2015	Jia Jia	Biostat PHD
2015	Yingda Jiang	Biostat PHD
2015	Sung Hwan Kim	Biostat PHD
2017	Jenna Carlson	Biostat PHD
2017	Ying Shan	Biostat PHD
2018	Rich Biedrzycki	Human Genetics Master
2019	Li Zhu	Biostat PHD
2020	Hongchang Gao	Engineering PHD
2022	Yujia Li	Biostat PHD
2022	Wayne Mao	Computational Biology PHD
2022	Zhouyuan Huo	Engineering PHD
2022	Kamran Dizaji	Engineering PHD
2023	Yanfu Zhang	Engineering PHD

Scholarship Oversight Committee Member:

2019-2020	Jeremy Landeo Gutierrez	Medical Fellow
2019-2020	Oluwabunmi Olaloye	Medical Fellow
2019-2022	Christina Schutt	Medical Fellow
2021-present	Kristina Gaietto	Medical Fellow

RESEARCH
Current Grant Support:

Funding Agency:	NIAID
Grant Number:	P01AI106684-7239
Title of Grant:	Immune-Airway Epithelial Interactions in Steroid Refractory Severe Asthma

Principal Investigator: Ray A
Role on Grant: Principal Investigator of Bioinformatics and Sequencing Core
Years Inclusive: 06/01/22–05/31/27
Percent Effort: 15%
Subaward amount: $1,310,000

Funding Agency: NIDDK
Grant Number: R01DK138458
Title of Grant: Trans-ancestry, single-cell multiomics dissection of IBD-associated loci in CD4 memory T cells
Principal Investigator: Chen and Duerr (contact)
Role on Grant: Principal Investigator
Years Inclusive: 03/01/24–02/29/28
Percent Effort: 15%
Total Amount: $1,900,000

Funding Agency: NIBIB
Grant Number: R01EB034116
Title of Grant: SCH: New Advanced Machine Learning Framework for Mining Heterogeneous Ocular Data to Accelerate
Principal Investigator: Chen and Huang (contact PI)
Role on Grant: Principal Investigator
Years Inclusive: 07/15/22–03/31/26
Percent Effort: 15%
Total Amount: $1,200,000

Funding Agency: DoD/CDMRP
Grant Number: HT94252510393 and HT94252510394 (Partnering)
Title of Grant: A Collaborative Multiomic Approach to Pediatric Scleroderma (CMAPS) to Molecularly Characterize and Stratify Patients
Principal Investigator: Torok and Chen
Role on Grant: Principal Investigator
Years Inclusive: 08/15/2025-08/14/2029
Percent Effort: 10%
Total Amount $3,106,712

Funding Agency: NIH/NIAMS
Grant Number: R01AR086434
Title of Grant: Integrating Spatial and Single-Cell Transcriptomics with Histology to Define Endotypes in Pediatric Scleroderma
Principal Investigator: Torok (contact) and Chen
Role on Grant: Principal Investigator
Years Inclusive: 09/02/2025-08/31/2030

Percent Effort: 12%
Total Amount $2,405,223

Funding Agency: Scleroderma Foundation
Grant Number: NA
Title of Grant: Spatial Transcriptomics of Skin to Augment Understanding of
                         Cellular Interactions and Disease Propagation in Juvenile
                         Scleroderma
Principal Investigator: Torok (contact) and Chen
Role on Grant: Principal Investigator
Years Inclusive: 09/01/22–12/31/25
Percent Effort: 5%
Annual Amount $100,000

Funding Agency: NIGMS
Grant Number: R01GM141076-01A1
Title of Grant: New statistical methods and software for modeling complex
                         multivariate survival data with large-scale covariates
Principal Investigator: Ding
Role on Grant: Co-Investigator
Years Inclusive: 6/01/22–05/31/26
Percent Effort: 10%
Subaward Amount $150,000

Funding Agency: NIH
Grant Number: U19AG055373
Title of Grant: Trans-omics Integration of Multi-omics Studies for Osteoporosis
Principal Investigator: Deng, Hong-wen
Role on Grant: Co-Investigator and Pitt PI
Years Inclusive: 09/01/22–08/31/27
Percent Effort: 10%
Subaward Amount $154,000

Funding Agency: NHLBI
Grant Number: R01 HL152475-01A1
Title of Grant: Nasal epithelial epigenomics and transcriptomics and asthma in
                         Hispanic adults
Principal Investigator: Celedón
Role on Grant: Co-Investigator
Years Inclusive: 01/01/21 – 12/31/25
Percent Effort: 5%
Subaward Amount: $100,000

Selected Prior Grant Support:

Funding Agency:	NIAID
Grant Number:	P01 AI10668406
Title of Grant:	Immune Airway-Epithelial Interactions in Steroid-refractory Severe Asthma
Principal Investigator:	Ray A
Role on Grant:	Core C Co-investigator
Years Inclusive:	06/01/15–05/31/18
Role on Grant:	Core C Principal Investigator (Original Core PI Jay Kolls left Pitt)
Years Inclusive:	06/01/18–05/31/21
Percent Effort:	10%
Subaward Amount:	$1,815,769

Funding Agency:	National Science Foundation
Grant Number:	2040588
Title of Grant:	NSF Convergence Accelerator Track D: A Trusted Integrative Model and Data Sharing Platform for Accelerating AI-Driven Health Innovation
Principal Investigator:	Li H (Duke University)
Role on Grant:	Co-Principal Investigator
Years Inclusive:	09/15/2020-09/14/2022 (qualified for phase II renewal)
Percent Effort:	8%
Amount:	$999,737

Funding Agency:	NSF
Grant Number:	2029520
Title of Grant:	RAPID: In-Home Automated and Non-Invasive Evaluation of COVID-19 Infection with Commodity Smartphones
Principal Investigator:	Gao W
Role on Grant:	Co-Principal Investigator
Years Inclusive:	07/01/20-06/31/22
Percent Effort:	5%
Amount	$200,000

Funding Agency:	UPMC/CHP
Title of Grant:	UPMC: i4Kids Pilot Grant Application - Acoustic Waveform Respiratory Examination for Pediatric Inflammatory Airway Diseases
Principal Investigator:	Chen W
Role on Grant:	Principal Investigator
Years Inclusive:	07/01/20–12/31/21
Percent Effort:	NA
Amount:	$44,925

Funding Agency:	NHLBI

Grant Number:	R01 HL117191
Title of Grant:	Epigenetic variation and childhood asthma in Puerto Ricans
Principal Investigator:	Celedon JC
Role on Grant:	Co-Investigator
Years Inclusive:	05/01/17 – 04/31/21
Percent Effort:	10%
Subaward Amount	$149,000

Funding Agency:	UPMC/University of Pittsburgh Competitive Medical Research Fund
Grant Number:	NA
Title of Grant:	Novel methods for design and analysis of epigenetics studies of childhood asthma
Principal Investigator:	Chen W
Role on Grant:	Principal Investigator
Years Inclusive:	09/01/13 – 08/31/15
Percent Effort:	NA
Amount	$25,000

Funding Agency:	NEI
Grant Number:	R01 EY024226
Title of Grant:	AMD genetics: methods and analysis for progression, prediction, and association
Principal Investigator:	Chen W
Role on Grant:	Principal Investigator
Years Inclusive:	04/01/14 – 03/31/18
Percent Effort:	30%
Amount	$898,595

Funding Agency:	NHGRI
Grant Number:	R01 HG007358
Title of Grant:	Statistical methods for population and family-based whole-genome sequence data
Principal Investigator:	Chen W
Role on Grant:	Principal Investigator
Years Inclusive:	04/25/14 – 01/31/20
Percent Effort:	25%
Amount	$1,706,461

Funding Agency:	Cystic Fibrosis Foundation Grant
Grant Number:	NA
Title of Grant:	Transcriptomic responses to Kalydeco – role in predicting outcomes
Principal Investigator:	Jay Kolls
Role on Grant:	Co-Principal Investigator
Years Inclusive:	01/01/16 – 12/31/17

Percent Effort: 10%
Amount $200,000

Funding Agency: NHGRI
Grant Number: R01 HG006857
Title of Grant: Design and analysis of sequencing studies for gene mapping in families
Principal Investigator: Li B (Vanderbilt University)
Role on Grant: Subcontract-PI
Years Inclusive: 06/01/13 – 05/31/17
Percent Effort: 20%

Funding Agency: NHLBI
Grant Number: R01 HL117191
Title of Grant: Epigenetic variation and childhood asthma in Puerto Ricans
Principal Investigator: Celedon JC
Role on Grant: Co-Investigator
Years Inclusive: 08/01/13 – 07/31/17
Percent Effort: 20%

Funding Agency: NIH
Grant Number: UL1TR001857
Title of Grant: CTSI Quantitative Methodologies Pilot Program
Principal Investigator: Chen W
Role on Grant: Principal Investigator
Years Inclusive: 09/01/19–08/31/20
Percent Effort: NA
Amount $10,000

Funding Agency: NEI
Grant Number: R21EY030488
Title of Grant: Deep-learning-based prediction of AMD and its progression with GWAS and fundus image data
Principal Investigator: Chen and Ding (contact PI)
Role on Grant: Principal Investigator
Years Inclusive: 08/01/20–05/31/23 (NCE)
Percent Effort: 15%
Total Amount $421,200

Funding Agency: NHLBI
Grant Number: R21HL150431
Title of Grant: Multi-omics Analysis of Childhood Asthma in Hispanics
Principal Investigator: Chen (contact PI) and Celedon
Role on Grant: Principal Investigator

Years Inclusive:	08/15/20–07/31/23 (NCE)	
Percent Effort:	10%	
Total Amount	$234,000	

Funding Agency:	Merck
Grant Number:	RFA
Title of Grant:	Severity of SARS-CoV-2 infection in household contacts of patients with COVID-19: The role of epigenetics
Principal Investigator:	Shaikh
Role on Grant:	Co-Principal Investigator
Years Inclusive:	06/01/21–12/31/23
Percent Effort:	5%
Subaward amount:	$50,000

Funding Agency:	University of Pittsburgh, Pitt Innovation Challenge
Title of Grant	Acoustic Waveform Respiratory Examination (AWARE)
Principal Investigator:	Dr. Forno (contact PI)
Role on Grant:	Co-Principal Investigator
Years Inclusive:	01/01/21 - 06/30/23
Percent Effort:	NA
Total Amount	$125,000

Other research related activities

- 2009   Co-inventor for Compositions and methods for diagnosing and treating macular degeneration. Patent no.: US 8119348 B2
- 2009-present   Reviewer For *Nature, New England Journal of Medicine, Nature Genetics, Nature Methods, Nature Biotechnology, The American Journal of Respiratory and Critical Care Medicine, Nature Communications, European Respiratory Journal, Genome Research, Genome Biology, Genome Medicine, Nucleic Acid Research, American Journal of Human Genetics, PloS Genetics, Diabetes, Microbiome, Bioinformatics, Briefings in Bioinformatics, Biometrics, Annals of Applied Statistics, Statistics in Medicine, BMC Medical Genetics, PLoS One, Genetic Epidemiology, Human Heredity, Molecular Vision, Acta Ophthalmologica, BMC Bioinformatics, Gene, Methods, Oncotarget, Scientific Reports etc.*
- 2015   NIH grant reviewer for Children's Health Exposure Analysis Resource (CHEAR): Data Repository, Analysis and Science Center (U2C). NIEHS, Research Triangle Park, NC.
- 2013-present   Member of Statistical Advisory Board, PLOS ONE
- 2016   Guest Associate Editor for PLoS Genetics
- 2018   NIH grant reviewer for NIH Transformative Research Awards study

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- 2018-2020   Program committee member for European Conference on Computational Biology (ECCB)
- 2019   NIH grant reviewer for study section in NIEHS
- 2019   NIH grant reviewer for NIH HDM study section
- 2019-present   Special Issue Editor for Clinical eHealth
- 2020   Grant reviewer for NEI supported DRCR.net
- 2020   NIH grant reviewer for NIEHS K99/R00
- 2020   NIH grant reviewer for NEI special panel
- 2020   NIH grant reviewer for GCAT study section
- 2020-present   Editorial Board Member for American Journal of Respiratory Cell and Molecular Biology
- 2021-present   Editorial Board Member for Genome Biology
- 2020   Co-inventor for systems and methods for evaluating respiratory function using a smartphone. Provisional patent no.: 63/031,876
- 2020   Grant reviewer for French National Research Agency
- 2021   Grant reviewer for The Innovation and Technology Commission in Hong Kong
- 2022   NIH grant reviewer for NIGMS MIRA
- 2022   NIH grant reviewer for BDMA
- 2022   Grant reviewer for NEI supported DRCR.net
- 2023   NIH grant reviewer for GNOME
- 2024   NIH grant reviewer for NHLBI ZHL1 CSR-Z (O2)
- 2025-2029   Member, NIH BDMA study section

LIST of CURRENT RESEARCH INTERESTS
- Development of statistical and computational methods for Genome-wide Association Studies (GWAS) and Next-Generation Sequencing (NGS)
- Multi-omics study of asthma
- Genetic and image study of Age-related Macular Degeneration (AMD)
- Computational methods for multi-omics single cell data
- Computational methods for Electronic Health Record (EHR) data
- Machine learning and deep learning methods

INVITED SEMINARS AND LECTURESHIPS
Local
2011   Department of Pediatrics, University of Pittsburgh, Pittsburgh, PA
2012   Department of Human Genetics, University of Pittsburgh, Pittsburgh, PA
2014   Department of Developmental Biology, University of Pittsburgh, Pittsburgh, PA

2015	Department of Biomedical Informatics, University of Pittsburgh, Pittsburgh, PA
2016	Department of Computational Biology, Carnegie Mellon University, Pittsburgh, PA
2016	Department of Pediatrics, MMR seminar, University of Pittsburgh, Pittsburgh, PA
2017	Computational Biology orientation week seminar, Department of Computational Biology, University of Pittsburgh, PA
2019	Department of Computational Biology, University of Pittsburgh, Pittsburgh, PA
2019	10X Genomics User Group Conference, Pittsburgh, PA
2020	Department of Human Genetics, University of Pittsburgh, PA
2020	Department of Biomedical Informatics, University of Pittsburgh, Pittsburgh, PA
2020	Department of Biostatistics, University of Pittsburgh, Pittsburgh, PA

National

2011	Department of Biostatistics, University at Buffalo, The State University of New York, Buffalo, NY
2011	Department of Human Genetics, Rutgers University, New Brunswick, NJ
2015	Department of Biostatistics, University at Buffalo, The State University of New York, Buffalo, NY
2016	Center for Quantitative Science, Vanderbilt University, Nashville, TN
2018	Department of Human Genetics, University of Houston, Houston, TX
2018	Department of Statistics, University of Georgia, GA
2019	Department of Biostatistics, University of Minnesota, MN
2020	Center for Statistical Genetics and Genomics, Duke University, Durham, North Carolina
2020	Machine learning seminar, Michigan State University, East Lansing, MI (Postponed due to COVID)
2020	Channing Division of Network Medicine, Harvard Medical School, online
2021	Department of Bioengineering, Carnegie Mellon University, online
2022	Department of Public Health, Penn State University, PA
2022	Hasting Lung Research Center, University of Southern California, CA
2023	CALA Research conference, Orlando, FL
2023	Michigan State University, East Lansing, MI
2024	UT Health Houston, Houston, TX
2025	Mathematical Molecular Biosciences (MMB) Online Seminar
2025	MidSouth Computational Biology and Bioinformatics Society conference, Salk Lake City, Utah

International

2009	The 59th Annual meeting of the American Society of Human Genetics, Honolulu, HI
2009	Joint Statistical Meeting, Washington, DC
2010	The 60th Annual Meeting of the American Society of Human Genetics, Washington, DC
2011	Department of Oncology, Fudan University Shanghai Cancer Center, Shanghai, China

2012	The Annual Meeting of Eastern North American Region Biometric Society, Baltimore, MD
2013	The Annual Meeting of Eastern North American Region Biometric Society, Seattle, WA
2013	Department of Mathematics, Nanjing University, Nanjing, China
2015	Center for Statistical Science of Tsinghua University, Beijing, China
2015	School of Medicine, Sun Yet-San University, Guangzhou, China
2016	The Annual Meeting of Eastern North American Region Biometric Society, Austin, TX
2016	The Third Taihu International Statistics Forum, Shanghai, China
2017	Recomb-seq conference, Hong Kong
2017	Summer School, Center for Statistical Science of Tsinghua University, Beijing, China
2017	Joint Statistical Meeting, Baltimore, MD
2018	The 1st International Symposium on Genomics and Translational Medicine, Suzhou, China
2018	ISRD-ATS joint conference, Xiamen, China
2019	Joint Statistical Meeting, Denver, CO
2019	ISRD-ATS joint conference, Shanghai, China
2019	ICSA International Conference, Hangzhou, China
2020	The Annual Meeting of Eastern North American Region Biometric Society, Nashville, TN
2020	Chinese-American Lung Association Seminar Talk, online
2021	I2Eye 2021 Fourth Annual Conference on Innovative Imaging in Eye Disease, online
2021	International Conference on Intelligent Biology and Medicine, online
2021	The International Symposium on Future Technologies for Young Investigators, online
2023	Zhejiang University, Hangzhou, China
2023	Nanjing Medical University, Nanjing, China
2023	Joint Statistical Meeting, Toronto, CA
2023	Renmin University, Beijing, China
2024	The 10th International Statistical Genetics and Genomics Meeting, Wuhan, China
2024	2024 International Youth Forum on Public Health, Nanjing, China
2024	International Respiratory Medicine Conference, Shanghai, China
2024	Joint Statistical Meeting, Portland, OR
2025	STATGEN conference, Minnesota, MN
2025	CMStatistics, London, UK

SERVICE

University and Medical School Service

- 2011-present   Statistical mentor for division clinical fellows
- 2011-present   Statistical consultant for Division, Department and University
- 2012-present   Interviewer for division faculty recruitment
- 2012-present   Ad-hoc internal reviewer for R01 proposals from School of Medicine

- 2014-present   Summer Intern mentor for Children's Hospital of Pittsburgh (CHP)
- 2016-2017   Member of steering committee for CHP core facilities
- 2017-2020   Reviewer for CMRF award
- 2017-present   Director of Statistical Genetics Core, Division of Pulmonary Medicine
- 2020   Chair of Faculty Search Committee, Division of Pulmonary Medicine
- 2023   Member of Faculty Search Committee, Department of Pediatrics
- 2023-2024   Co-Chair of local committee of STATGEN 2024
- 2023-2024   Member of Faculty Search Committee, Department of Biostatistics

External Service
- 2013-2014   Abstract reviewer for Bio-Medical Informatics and Cybernetics
- 2015   Invited session chair, Joint Statistical Meeting, 2015, Seattle, WA
- 2016   Invited session organizer and chair, Eastern North American Region Conference 2016, Austin, Texas
- 2016   Invited session chair, International Chinese Statistical Association, Atlanta, GA
- 2017   Invited session chair, Joint Statistical Meeting, 2017, Baltimore, MD
- 2018   Member of Scientific committee, the 1st International Symposium on Genomics and Translational Medicine
- 2018-present   Scientific committee member of The International Symposium on Genomics and Translational Medicine
- 2019   Organizing committee member for the international American Statistical Association Lifetime Data Science Conference (LiDS), Pittsburgh, PA
- 2019   Invited session chair, Lifetime Data Science Conference, Denver, CO
- 2019   Invited session chair, Joint Statistical Meeting, Denver, CO
- 2019   Invited session chair, ICSA International, Hangzhou, China
- 2019-present   Editor for special issue on Clinical eHealth
- 2019-present   Committee Chair, The Chinese-American Lung Association (CALA)
- 2020-2022   Scientific Advisory Committee, American Thoracic Society (ATS)
- 2022-2024   Scientific Grant Review Committee, American Thoracic Society (ATS)
- 2020-present   Editorial Board of American Journal of Respiratory Cell and Molecular Biology
- 2021-present   Editorial Board of Genome Biology
- 2023-2024   Co-chair of local committee for STATGEN 2024 conference
- 2024-2025   Secretary of Chinese-American Lung Association (CALA)
- 2024-2027   Chapter representative, Pittsburgh Chapter, American Statistical Association
- 2025   Invited session chair, MidSouth Computational Biology and Bioinformatics Society (MCBIOS)
- 2025   Award selection committee members, International Congress of Basic Science (ICBS)
- 2025   Vice President of Chinese-American Lung Association (CALA)