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Department of Neurological Surgery, Washington University
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Education

2013	Ph.D., Human and Statistical Genetics, Washington University
2008	A.B., Biological Sciences, The University of Chicago

Research Experience

Post-Doctoral: 2013-Present	Department of Orthopaedic Surgery, Washington University "Rare genetic variants and their contribution to adolescent idiopathic scoliosis" "High-throughput single nucleotide mutagenesis using reversibly terminated inosine" "Exome-wide association study of common SNPs in adolescent idiopathic scoliosis" "Epidemiology of radiological features of Chiari I malformation" "Rare genetic variants and their contribution to Chiari I malformation" "Massively parallel functional assessment of *COL3A1* genetic variation" Advisors: Christina Gurnett, MD, PhD and Matthew Dobbs, MD
Graduate: 2008-2013	Human and Statistical Genetics Program, Washington University "Identification and functional characterization of rare variants in nicotinic acetylcholine receptor genes and their contribution to substance dependence" Advisor: Alison Goate, DPhil
Undergraduate: 2005-2008	Department of Human Genetics, The University of Chicago "Rare variants near the *IL4* gene and risk for asthma" "Coding variants in HLA-linked Olfactory Receptors and their influence on female preference of male odors" Advisor: Carole Ober, PhD
2005	Department of Biochemistry and Molecular Biology, Saint Louis University "Alleles of the Nipped-B gene in *Drosophila Melanogaster* in a model of Cornelia de Lange syndrome" Advisor: Dale Dorsett, PhD

Teaching & Mentoring Experience

Teaching Assistant:	The University of Chicago
2007	Physiology
2007	Cell and Molecular Biology
2008	Genetics
2008	Metabolism and Nutrition

Teaching Assistant:	Washington University
2011	Research Exploration in Genomics

Awards and Honors

2014	American Society of Human Genetics Annual Meeting Platform Presentation
2010	Human and Statistical Genetics Retreat, Best Poster Award
2017	American Society of Human Genetics Annual Meeting Platform Presentation

Publications

1 Gause, M., Webber, H. A., Misulovin, Z., Haller, G., Rollins, R. A., Eissenberg, J. C., Bickel, S. E. & Dorsett, D. Functional links between Drosophila Nipped-B and cohesin in somatic and meiotic cells. Chromosoma 117, 51-66, doi:10.1007/s00412-007-0125-5 (2008). (PDF)

2 Haller, G., Torgerson, D. G., Ober, C. & Thompson, E. E. Sequencing the IL4 locus in African Americans implicates rare noncoding variants in asthma susceptibility. The Journal of Allergy and Clinical Immunology 124, 1204-1209 e1209, doi:10.1016/j.jaci.2009.09.013 (2009). (PDF)

3 Thompson, E. E., Haller, G., Pinto, J. M., Sun, Y., Zelano, B., Jacob, S., McClintock, M. K., Nicolae, D. L. & Ober, C. Sequence variations at the human leukocyte antigen-linked olfactory receptor cluster do not influence female preferences for male odors. Human Immunology 71, 100-103, doi:10.1016/j.humimm.2009.10.004 (2010). (PDF)

4 Cruchaga, C., Haller, G., Chakraverty, S., Mayo, K., Vallania, F. L., Mitra, R. D., Faber, K., Williamson, J., Bird, T., Diaz-Arrastia, R., Foroud, T. M., Boeve, B. F., Graff-Radford, N. R., St Jean, P., Lawson, M., Ehm, M. G., Mayeux, R., Goate, A. M. & Consortium, N.-L. N. F. S. Rare variants in APP, PSEN1 and PSEN2 increase risk for AD in late-onset Alzheimer's disease families. PloS One 7, e31039, doi:10.1371/journal.pone.0031039 (2012). (PDF)

5 Haller, G., Druley, T., Vallania, F. L., Mitra, R. D., Li, P., Akk, G., Steinbach, J. H., Breslau, N., Johnson, E., Hatsukami, D., Stitzel, J., Bierut, L. J. & Goate, A. M. Rare missense variants in CHRNB4 are associated with reduced risk of nicotine dependence. Human Molecular Genetics 21, 647-655, doi:10.1093/hmg/ddr498 (2012). (PDF)

6 Buchan, J. G., Alvarado, D. M., Haller, G., Aferol, H., Miller, N. H., Dobbs, M. B. & Gurnett, C. A. Are copy number variants associated with adolescent idiopathic scoliosis? Clinical Orthopaedics and Related Research 472, 3216-3225, doi:10.1007/s11999-014-3766-8 (2014). (PDF)

7 Buchan, J. G., Alvarado, D. M., Haller, G., Cruchaga, C., Harms, M. B., Zhang, T., Willing, M. C., Grange, D. K., Braverman, A. C., Miller, N. H., Morcuende, J. A., Tang, N. L., Lam, T. P., Ng, B. K., Cheng, J. C., Dobbs, M. B. & Gurnett, C. A. Rare variants in FBN1 and FBN2 are associated with severe adolescent idiopathic scoliosis. Human Molecular Genetics 23, 5271-5282, doi:10.1093/hmg/ddu224 (2014). (PDF)

8 Haller, G., Kapoor, M., Budde, J., Xuei, X., Edenberg, H., Nurnberger, J., Kramer, J., Brooks, A., Tischfield, J., Almasy, L., Agrawal, A., Bucholz, K., Rice, J., Saccone, N., Bierut, L. & Goate, A. Rare missense variants in *CHRNB3* and *CHRNA3* are associated with risk of alcohol and cocaine dependence. Human Molecular Genetics 23, 810-819, doi:10.1093/hmg/ddt463 (2014). (PDF)

9 Haller, G., Li, P., Esch, C., Hsu, S., Goate, A. M. & Steinbach, J. H. Functional characterization improves associations between rare non-synonymous variants in CHRNB4 and smoking behavior. PloS One 9, e96753, doi:10.1371/journal.pone.0096753 (2014). (PDF)

10 Sadler, B., Haller, G., Agrawal, A., Culverhouse, R., Bucholz, K., Brooks, A., Tischfield, J., Johnson, E. O., Edenberg, H., Schuckit, M., Saccone, N., Bierut, L. & Goate, A. Variants near CHRNB3-CHRNA6 are associated with DSM-5 cocaine use disorder: evidence for pleiotropy. Scientific Reports 4, 4497, doi:10.1038/srep04497 (2014). (PDF)

11 Zhang, T. X., Haller, G., Lin, P., Alvarado, D. M., Hecht, J. T., Blanton, S. H., Stephens Richards, B., Rice, J. P., Dobbs, M. B. & Gurnett, C. A. Genome-wide association study identifies new disease loci for isolated clubfoot. Journal of Medical Genetics 51, 334-339, doi:10.1136/jmedgenet-2014-102303 (2014). (PDF)

12 Baschal, E. E., Wethey, C. I., Swindle, K., Baschal, R. M., Gowan, K., Tang, N. L., Alvarado, D. M., Haller, G., Dobbs, M. B., Taylor, M. R., Gurnett, C. A., Jones, K. L. & Miller, N. H. Exome sequencing identifies a rare HSPG2 variant associated with familial idiopathic scoliosis. G3 5, 167-174, doi:10.1534/g3.114.015669 (2015). (PDF)

13 Haller, G., Alvarado, D. M., Willing, M. C., Braverman, A. C., Bridwell, K. H., Kelly, M., Lenke, L. G., Luhmann, S. J., Gurnett, C. A. & Dobbs, M. B. Genetic Risk for Aortic Aneurysm in Adolescent Idiopathic Scoliosis. The Journal of Bone and Joint Surgery. American volume 97, 1411-1417, doi:10.2106/JBJS.O.00290 (2015). (PDF)

14 Sadler, B., Haller, G., Edenberg, H., Tischfield, J., Brooks, A., Kramer, J., Schuckit, M., Nurnberger, J. & Goate, A. Positive Selection on Loci Associated with Drug and Alcohol Dependence. PloS One 10, e0134393, doi:10.1371/journal.pone.0134393 (2015). (PDF)

15 Haller, G., Alvarado, D., McCall, K., Yang, P., Cruchaga, C., Harms, M., Goate, A., Willing, M., Morcuende, J. A., Baschal, E., Miller, N. H., Wise, C., Dobbs, M. B. & Gurnett, C. A. A polygenic burden of rare variants across extracellular matrix genes among individuals with adolescent idiopathic scoliosis. Human Molecular Genetics 25, 202-209, doi:10.1093/hmg/ddv463 (2016). (PDF)

16. Haller G., Alvarado D., McCall M., Mitra R. D., Dobbs M. B., Gurnett, C. A. Massively parallel single nucleotide mutagenesis using reversibly-terminated inosine. *Nature Methods*. **13**, 923-924, doi:10.1038/nmeth.4015 (2016). (PDF)

17. Haller, G., H. Zabriskie, S. Spehar, T. Kuensting, X. Bledsoe, A. Syed, C. A. Gurnett and M. B. Dobbs (2017). Lack of joint hypermobility increases the risk of surgery in adolescent idiopathic scoliosis. *J Pediatr Orthop B.* **27**, 152-158 (2017). (PDF)

18. Haller G, McCall K, et al. A missense variant in *SLC39A8* is associated with severe idiopathic scoliosis. *Nature Communications* **9**(1): p. 4171 (2018). (PDF)

Manuscripts

1. Haller G, Sadler B, Kuensting T, et al. Radiographic predictors of risk of surgery, syringomyelia and scoliosis among patients with Chiari I malformation. in preparation.

2. Haller G, Sadler B, Antunes, L, Dobbs M, Gurnett C. Rare and *de novo* CHD gene variants associated with Chiari I malformation. in preparation.

Funding

2009-2011	NIGMS Interface of Psychology, Neuroscience and Genetics (IPNG) Predoctoral Fellowship
2014-2017	Shriners Hospital for Children Postdoctoral Fellowship
2016-2019	Genetics of Osteoperosis and Atypical Femoral Fractures, Merck (Consultant, Steven Mumm, PhD: PI)
2018-2021	Genetic Modifiers of Hypophosphatasia, Shriners Hospital for Children (1 calander month, Steven Mumm, PhD: PI)
2018-2021	High-throughput functional screening of *STAT3* genetic variation in Pediatric Immune Disregulation synromes, Childrens Discovery Institute (2 calander months, Megan Cooper, MD, PhD: PI)

References

Christina Gurnett, MD, PhD (Postdoctoral advisor)
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