

Christopher W. Bartlett Ph.D.

Associate Professor of Pediatrics (with tenure)

College of Medicine

The Ohio State University

Principle Investigator, Battelle Center for Mathematical Medicine

The Research Institute at Nationwide Children's Hospital

Positions:

- 2014-present Associate Professor of Pediatrics (with tenure), College of Medicine, The Ohio State University, Columbus, OH
- 2014-present Associate Professor, Battelle Center for Mathematical Medicine (formerly known as the Center for Quantitative and Computational Biology), The Research Institute at Nationwide Children's Hospital, Columbus, OH
- 2006-2014 Assistant Professor of Pediatrics, College of Medicine, The Ohio State University, Columbus, OH
- 2006-2014 Assistant Professor, Battelle Center for Mathematical Medicine (formerly known as the Center for Quantitative and Computational Biology), The Research Institute at Nationwide Children's Hospital, Columbus, OH
- 2003 – 2006 Postdoctoral Research Scholar, Center for Statistical Genetics Research, College of Public Health & Carver College of Medicine, University of Iowa, Iowa City, IA

Education:

- Postdoc., Statistical Genetics, University of Iowa (2003-2006)
- Ph.D., Behavioral and Neural Sciences, Rutgers University (2003)
- B.S., Psychology, Wright State University (1998)

Professional Memberships:

- American Society of Human Genetics; American Speech and Hearing Association; International Genetic Epidemiology Society; Cognitive Neuroscience Society (past); Society for Neuroscience (past)

Recent Service Activities:

Ongoing:

- Associate Editor, *BMC Bioinformatics*
- Book Editor (with Stephen A. Petrill), "Frontiers in Genetics and Epigenetics in Development across the lifespan" in *Frontiers in Developmental Science* book series (Ed. Kirby Deater-Deckard), Taylor & Francis Group, London, UK
- 2013 – present. Chair, Organizing Committee for a series of joint human genetics symposia for Nationwide Children's Hospital and The Ohio State University (~150 attendees)
- 2013 – 2014. BioVis Conference, Publication Committee (Co-Chair)
- 2011 – 2014. BioVis Conference, Contest Committee (Co-Chair); 3 year appointment
- 2010 – present. Molecular Cellular and Developmental Biology Graduate Studies Committee, The Ohio State University. Member. Notes: The MCDB Graduate Studies

Committee is responsible for admissions and curriculum development and advises the MCDB Chair as necessary.

Past service:

- 2010 – 2013. Ohio Supercomputer Center, Hardware Committee, Member
- 2009 - 2010 Battelle Center for Mathematical Medicine Website Development Committee, Member
- 2007 - 2009 Battelle Center for Mathematical Medicine Faculty Recruitment Committee, Member
- 2009 IMPROVE Task force, Member - This was a committee that met several times to discuss green conservation programs that could also save the research institute money.
- Graduate Faculty Representative – an impartial observer outside one’s own department /program that ensures a Ph.D. dissertation defense is fair and within sufficient quality for the university. Graduate Faculty Representatives are full voting member of the committee. Served in on defense each year in 2008, 2009, 2011, 2012, 2013, 2014.

Completed Study Section Service:

- NIH GHD Overflow Special Emphasis Panel (ZRG1 GHD C 08), Study Section Peer Reviewer (2014)
- NIH NIDCD Special Emphasis Panel for Clinical Research Center Grant (P50) Application (ZDC1 SRB R 31), Study Section Peer Reviewer, (2014)
- NIH LCOM Special Emphasis Panel (ZRG1 BBBP J 03), Study Section Peer Reviewer (2013)
- Ohio Supercomputer Center Allocations Proposal ad hoc review (2012, 2013,2014)
- Department of Defense CDMRP Autism Research Program, Study Section Peer Reviewer (2007, 2009, 2010, 2012)
- UK Medical Research Council (MRC) Neurosciences and Mental Health Board, Study Section Peer Reviewer (2007, 2009, 2011)
- Wellcome Trust Neuroscience and Mental Health Section (UK), Study Section Peer Reviewer (2009, 2010)
- CCTS Study Section for Novel Clinical and Translational Methodologies Program (NCTMP): Application of Computer, Mathematical, Biostatistical, or Computational Methods in Clinical and Translational Medicine, Study Section Peer Reviewer (2010)
- NIH GHD/GCAT Special Emphasis Panel (ZRG1 GGG F 02), Study Section Peer Reviewer (2010)
- NIH ARRA challenge grant applications Biobehavioral & Behavioral Processes L(58)R & J(58)R, Study Section Peer Reviewer (2009)

Completed Journal Service:

- Co-Editor, *BMC Proceedings* “Proceedings of the 3rd Annual Symposium on Biological Data Visualization: Data Analysis and Redesign Contests” (2014)
- Co-Editor, *Journal of Child Psychology and Psychiatry*, Special Issue: *Gene-environment interplay in child psychology and psychiatry: challenges and ways forward* (October 2013)

- Scientific Associate Editor. Genetic Analysis Workshop 15 Conference Papers. *BMC Proceedings* (2006)
- Peer Reviewer for: American Journal of Medical Genetics Part A; American Journal of Medical Genetics Part B: Neuropsychiatric Genetics; American Journal of Psychiatry; Annals of Human Genetics; Archives of General Psychiatry; Autism Research; Behavior Genetics; Biological Psychiatry; Biometrical Journal; BMC Bioinformatics, Brain: A Journal of Neurology; Genes, Brain and Behavior; Genetic Epidemiology; Genome Research; Human Genomics; Human Heredity; IEEE Biological Data Visualization, JAMA Psychiatry, Journal of Child Psychology and Psychiatry; Journal of Speech, Language and Hearing Research; Life Sciences; Molecular Autism; Nature Methods; Neuropsychobiology; PLoS Genetics; PLoS ONE; Progress in Neuro-Psychopharmacology & Biological Psychiatry; Psychiatric Genetics

Teaching Experience

Courses

Full courses taught:

- Fall 2011. CIHD035: How to Find Genes for Language, Reading and Related Cognition. A psychology course jointly listed by the University of Jyväskylä and the University of Turku, Finland. Psychology Department. Advanced Seminar Course in Contemporary Issues in Human Development, Topic: Genetics of Language. 18 hours of lecture time.
- Winter 2010. The Ohio State University College of Medicine, Pediatrics. Undergraduate Research in Pediatrics 699. 15 credit hours
- Spring 2010. Nationwide Children's Hospital, Pediatrics. Undergraduate Research in Pediatrics 699. 15 credit hours
- Fall 2008. The Ohio State University, Molecular Cellular and Developmental Biology 890, Graduate Student Seminar Course, Lead Organizer and Evaluator

Lectures:

- Fall 2014. The Ohio State University, Biomedical Informatics, BMI 7830 - Advanced Bioinformatics for Human Diseases, Guest Lecturer
- Spring 2014. The Ohio State University College of Medicine, Med I Neuroscience Lab, Small Group Prosector, 4 x 3 hour sessions
- Spring 2013. The Ohio State University College of Medicine, Med I Neuroscience Lab, Small Group Prosector, 4 x 3 hour sessions
- Spring 2012. The Ohio State University College of Medicine, Med I Neuroscience Lab, Small Group Prosector, 6 x 3 hour sessions
- Winter 2012. The Ohio State University, Human Development and Family Science, HDFS 862 - Seminar in Human Development and Family Science, Guest Lecturer
- Winter 2012. The Ohio State University, Biophysics, Biophysics 702 - Advanced Experimental Methods, Guest Lecturer.
- Winter 2011. The Ohio State University, Biophysics, Biophysics 702 - Advanced Experimental Methods, Guest Lecturer.
- Spring 2011. The Ohio State University College of Medicine, Med I Neuroscience Lab, Small Group Prosector, 3 x 3 hour sessions
- Winter 2010. The Ohio State University, Biophysics, Biophysics 702 - Advanced Experimental Methods, Guest Lecturer.

- Spring 2010. The Ohio State University College of Medicine, Med I Neuroscience Lab, Small Group Prosector, 5 x 3 hour sessions
- Spring 2009. The Ohio State University College of Medicine, Med I Neuroscience Lab, Small Group Prosector, 5 x 3 hour sessions

Other Teaching

Workshops:

- 6/13/2011 - 6/15/2011 Workshop on Genetic Methodology and Language Related Disorders. University of Nebraska (Lincoln, NE) Enrollment: 10. Lecture hours: 8.

Undergraduate Research Preceptorships:

- Winter 2009 Biomedical Science Research Experience. Research Institute at Nationwide Children's Hospital & The Ohio State University (Columbus, OH)
- Spring 2009 Biomedical Science Research Experience. Research Institute at Nationwide Children's Hospital & The Ohio State University (Columbus, OH)
- Fall 2009 Microbiology Independent Study. Research Institute at Nationwide Children's Hospital & The Ohio State University (Columbus, OH)
- Winter 2009 Microbiology Independent Study. Research Institute at Nationwide Children's Hospital & The Ohio State University (Columbus, OH)

Teaching Assistant:

- 2002 Statistical Methods in Cognitive and Behavioral Research. Rutgers University (Newark, NJ) Teaching Assistant
- 2001 Statistical Methods in Cognitive and Behavioral Research. Rutgers University (Newark, NJ) Teaching Assistant
- 2000 Statistics in Neuroscience I. Rutgers University (Newark, NJ) Teaching Assistant
- 1999 Foundations of Neuroscience. Rutgers University (Newark, NJ) Teaching Assistant

Trainees

High School

Neel Koyawala, Summer 2011, Current: University of Pennsylvania, Business/Biology major

Cameron Houk, Summer 2011, Current: University of Notre Dame, Biology major

Undergraduate students

Matt Bruni, 2013-pres, Current: BS in Biology, The Ohio State University

Laruen Bruss, 2012-2013, Current: BS in Biomedical/Medical Engineering, The Ohio State University

Emily Ginier, 2008-2010, Current: MS, Reference Librarian, OSU Health Science Library

Jenna Purdy, 2009-2010, Current: MD, Pathology Resident, University of Toledo

Jennifer Ali, 2009-2010, Current: BS, Pharmaceutical Chemist, Boehringer Ingelheim

Neil Trivedi, Summer 2007, Current: Pharmacist

Graduate student

Fangyuan Zhang, Dissertation Committee, 2013-2014

Shuang Xia, Dissertation Committee, 2013-2014

Meng Wang, Dissertation Committee, 2012-2014

Pam Weaver, MCDB Lab Rotation, Fall 2009

Tabatha Simmons, Master's Advisor 2008-2010, Current: PhD Grad Student, The Ohio State University

Thomas Cremer, MCDB Lab Rotation, Fall 2007

Postdoctoral Researcher

Ning Li, 2011-pres

Soo Yeon Cheong, 2011-2012, Current: Senior Biostatistician, Samsung Bioepis Pharmaceutical, South Korea

Liping Hou, 2010-2011, Current: Postdoctoral Researcher, NIH

Publications:

Peer Reviewed Articles

Schmidt MB, Justice LM, Logan JAR, Schatschneider C, **Bartlett CW** (in press) "Do the Symptoms of Language Disorders Align with Treatment Goals? An Exploratory Study of Primary-Grade Students' IEPs." *Journal of Communication Disorders*

Justice LM, Logan J, Kaderavek J, Schmidt MB, Tompkins V, **Bartlett CW**. (in press) "Empirically Based Profiles of the Early Literacy Skills of Children with Language Impairment in Early Childhood Special Education." *Language Speech and Hearing Services in the Schools*.

Wang Z, Hart SA, Kovas Y, Lukowski S, Soden B, Thompson LA, Plomin R, McLoughlin G, **Bartlett CW**, Lyons IM, Petrill SA (2014) Who's Afraid of Math? Two Sources of Genetic Variance for Mathematical Anxiety. *Journal of Child Psychology and Psychiatry*. 55(9):1056-64.

Ray WC, Wolock SL, Callahan NW, Dong M, LI QQ, Liang C, Magliery T, **Bartlett CW** (2014) "Addressing the unmet need for visualizing Conditional Random Fields in Biological Data." *BMC Bioinformatics*. 15:202.

Goode MR, Cheong SY, Li N, Ray WC, **Bartlett CW**. (2014) "Collection and Extraction of Saliva DNA for Next Generation Sequencing." *Journal of Visualized Experiments*. e51697.

Ray WC, Rumpf RW, Sullivan B, Callahan N, Magliery T, Machiraju R, Wong B, Krzywinski M, **Bartlett CW** (2014) "Understanding the Sequence Requirements of Protein Families: Insights from the BioVis 2013 Contests." *BMC Proceedings* 8(S2):1.

Bartlett CW, Hou L, Flax JF, Hare A, Cheong SY, Fermano Z, Zimmerman-Bier B, Cartwright C, Azaro MA, Buyske S, Brzustowicz LM (2014) "A Genome-scan for Loci Shared by Autism Spectrum Disorder and Specific Language Impairment." *American Journal of Psychiatry*. 171(1): 72-81.

Wolock SL, Yates A, Petrill SA, Bohland JW, Blair C, Li N, Machiraju R, Huang K, **Bartlett CW** (2013) "Gene x Smoking Interactions on Human Brain Gene Expression: Finding Common Mechanisms in Adolescents and Adults." *Journal of Child Psychology and Psychiatry*. 54(10): 1109-1119.

Ray WC, **Bartlett CW**. "StickWRLD : Interactive Visualization of massive parallel contingency data for Personalized Analysis to facilitate Precision Medicine." *IEEE Proceedings on Visual Analytics in Healthcare*. 3: 68-71.

- Petrill, SA, **Bartlett, CW**, Blair, C. (2013) "Editorial: gene-environment interplay in child psychology and psychiatry - challenges and ways forward." *Journal of Child Psychology and Psychiatry*. 54(10): 1029.
- Sakai R, **Bartlett CW**, Popovic D, Ray WC, Aerts J (2013) "Aracari – exploration of eQTL data through visualization" *IEEE Transaction on Biological Data Visualization*.
- Chalkidis G., Tremmel G., Ray W., **Bartlett C.W.**, Miyano S., Nagasaki M. (in press) "Reverse Engineering Complex Disease Networks by Information Flow Analysis in eQTL Datasets." *Transactions on Biomedical Engineering: IEEE*.
- Hou L, Wang K, **Bartlett CW**. (2012) "Evaluation of a Bayesian Model-Integration-Based Method for Censored Data" *Human Heredity*, 74:1-11.
- Bartlett CW**, Flax JF, Fermano Z, Hare A, Hou L, Petrill SA, Buyske S, Brzustowicz LM. (2012) "Gene x Gene Interaction in Shared Etiology of Autism and Specific Language Impairment." *Biological Psychiatry*, 72:692-9.
- Bartlett C.W.**, Cheong SY., Hou L., Paquette J., Lum P., Jager G., Battke F., Vehlow C., Heinrich J., Nieselt K., Sakai R., Aerts J., Ray W.C. (2012) "An eQTL Biological Data Visualization Challenge and Approaches from the Visualization Community." *BMC Bioinformatics*. 13(8):S8
- Logan, J.A.R., Petrill, S.A., Hart, S.A., Thompson, L.A., Deater-Deckard, K., DeThorne, L.S., Schatschneider, C., **Bartlett, C.W.** (2012). Heritability across the distribution: An application of quantile regression. *Behavior Genetics*. 42(2):256-76.
- Li N., **Bartlett C.W.** "Defining the Genetic Architecture of Human Developmental Language Impairment." (2012) *Life Sciences*. 90(13-14):469-475.
- Worbis E.Y., Machiraju R., **Bartlett C.W.**, Ray W. (2011) "Visual Interactive Quality Assurance of Personalized Medicine Data and Treatment Subtype Assignment." *Proceedings on the Workshop on Visual Analytics in Healthcare: Understanding the Physician Perspective: IEEE*.
- Hou L., Phillips C., Azaro M., Brzustowicz L.M., **Bartlett C.W.** (2011). Validation of a Cost-Efficient Multi-Purpose SNP Panel for Disease Based Research. *PLoS ONE*, 5, e19699.
- Logan, J., Petrill, S.A., Flax, J.F., Justice, L.M., Hou, L., Tallal, P., Brzustowicz, L.M., **Bartlett C.W.** (2011). Genetic Covariation Underlying Reading, Language and Related Measures in a Sample Selected for Specific Language Impairment. *Behavior Genetics*, 23, 651-659.
- Simmons, T.R., Flax, J.F., Azaro, M.A., Hayter, J.E., Justice, L.M., Petrill, S.A., Bassett, A.S., Tallal, P., Brzustowicz, L.M., **Bartlett C.W.** (2010) Increasing Genotype-Phenotype Model Determinism: Application to Bivariate Reading/Language Traits and Epistatic Interactions in Language Impaired Families. *Human Heredity*, 70, 232-244.
- Vieland, V.J., Huang, Y., **Bartlett, C.**, Davies, T.F., Tomer, Y. (2008). A multilocus model of the genetic architecture of autoimmune thyroid disorder, with clinical implications. *Am J Hum Genet*, 82, 1349-1356.
- Wassink, T.H., Vieland, V.J., Sheffield, V.C., **Bartlett C.W.**, Goedken, R., Childress, D., Piven, J. (2008). Posterior probability of linkage analysis of autism dataset identifies linkage to chromosome 16. *Psychiatr Genet*, 18, 85-91.
- Liu, X.Q., Paterson, A.D., Szatmari, P., The Autism Genome Project (including **Bartlett C.W.**). (2008). Genome-wide linkage analyses of quantitative and categorical autism subphenotypes. *Bio Psychiatry*, 64, 561-570.

- Cordell, H.J., de Andrade, M., Babron, M.C., **Bartlett, C.W.**, BEyene, J., Bickebeller, H., Culverhouse, R., Cupples, L.A., Daw, E.W., Dupuis, J., Galk, C.T., Ghosh, S., Goddard, K.A., Goode, E.L., Hauser, E.R., Martin, L.J., Martinez, M., North, K.E., Saccone, N.L., Schmidt, S., Tapper, W., et. al. (2007). Genetic Analysis Workshop 15: gene expression analysis and approaches to detecting multiple functional loci. *BMC Proceedings, Proceedings from Genetic Analysis Workshop 15 ed., 1*, S1.
- Huang, Y., **Bartlett, C.W.**, Segre, A.M., O'Connell, J.R., Mangin, L.V., Vieland, V.J. (2007) Exploiting gene x gene interaction in linkage analysis. *BMC Proceedings, Proceedings from Genetic Analysis Workshop 15 ed., 1*, S64.
- Bartlett, C.W.**, Vieland, V.J. (2007). Accumulating quantitative trait linkage evidence across multiple datasets using the posterior probability of linkage. *Genetic Epidemiology, 31*, 91-102.
- Bartlett, C.W.**, Vieland, V.J., on behalf of Group 7. (2007). Discussing Gene-gene interaction: Warning- Translating equations to English may result in jabberwocky. *Genetic Epidemiology, 31*, S61-S67.
- The Autism Genome Project (including **Bartlett, C.W.**). (2007). Mapping autism risk loci using genetic linkage and chromosomal rearrangements. *Nature Genetics, 39*, 319-328.
- Bartlett, C.W.**, Gharani, N., Millonig, J.H., Brzustowicz, L.M. (2005). Three Autism Candidate Genes: Synthesis of Human Genetic Analysis with Other Disciplines. *International Journal of Developmental Neuroscience, 23*, 221-235.
- Bartlett, C.W.**, Goedken, R., Vieland, V.J. (2005). Effects of Updating Linkage Evidence across subsets of Data: Reanalysis of Autism Genetic Resource Exchange Dataset. *American Journal of Human Genetics, 76*, 688-695.
- Bartlett, C.W.**, Vieland, V.J. (2005). Two Novel Quantitative Trait Linkage Analysis Statistics Based the Posterior Probability of Linkage: Application to the COGA Families. *BMC Genetics, 6*, S121
- George, A.W., Mangin, L.A., **Bartlett, C.W.**, Logue, M.W., Segre, A.M., Vieland, V.J. (2005). Calculation of multipoint likelihoods using flanking marker data: A simulation study. *BMC Genetics, 6*, S44.
- Wassink, T.H., Piven, J., Vieland, V.J., Jenkins, L., Frantz, R., **Bartlett, C.W.**, Goedken, R., Childress, D., Spence, A.M., Smith, M., Sheffield, V.C. (2005). Evaluation of the chromosome 2q37.3 gene CENTG2 as an autism susceptibility gene. *American Journal of Medical Genetics Part B:Neuropsychiatric Genetics, 136*, 36-44.
- Bartlett, C.W.**, Flax, J.F., Logue, M.W., Smith, B.J., Vieland, V.J., Tallal, P., Brzustowicz, L.M. (2004). Examination of Potential Overlap in Autism and Language Loci on Chromosomes 2, 7, and 13 in Two Independent Samples Ascertained for Specific Language Impairment. *Human Heredity, 57*, 10-20
- Wassink, T.H., Brzustowicz, L.M., **Bartlett, C.W.**, Szatmari, P. (2004). The Search for Autism Disease Genes. *Mental Retardation and Developmental Disabilities Research Reviews, 10*, 272-283.
- Flax, J., Realpe-Bonilla, T., Hirsch, L.S., Brzustowicz, L.M., **Bartlett, C.W.**, Tallal, P. (2003). Specific language impairment in families: Evidence for co-occurrence with reading impairments. *Journal of Speech, Language and Hearing Research, 46*, 530-543.
- Bartlett, C.W.**, Flax, J.F., Logue, M.W., Vieland, V.J., Bassett, A.S., Tallal, P., Brzustowicz, L.M. (2002). A major susceptibility locus for specific language impairment is located on 13q21. *American Journal of Human Genetics, 71*, 45-55.

Tallal, P., Hirsch, L.S., Realpe-Bonilla, T., Miller, S., Brzustowicz, L.M., **Bartlett, C.W.**, Flax, J.F. (2001). Familial aggregation in specific language impairment. *Journal of Speech, Language, and Hearing Research*, 44, 1172-1182.

Book Chapter (reviewed)

Bartlett CW, Yates A, Flax JF, Brzustowicz LM. "Innovative Data Summary Measures Provide Novel Insights on Reading Performance." (to appear) In Reading Intervention: Research to Practice to Research. Conner CM & McCardle P (Eds) Brooke's Publishing, Baltimore, MD.

Publications under review:

Ruthsatz J, Petrill SA, Li N, Wolock SL, **Bartlett CW**. (revise and resubmit) "Molecular Genetic Evidence for Shared Etiology of Autism and Prodigy." *Human Heredity*.
Flax JF, Fermano Z, Hare A, Zimmerman-Bier B, **Bartlett CW**, Buyske S, Brzustowicz LM. (revise and resubmit) "Language Phenotyping in Families Ascertained for Autism and Specific Language Impairment." *Journal of Neurodevelopmental Disorders*.
Petrill SA, Buyske S, Flax JF, Brzustowicz LM, **Bartlett CW** (in peer review) "Reducing Environmental Variability in Reading Measures Increases Power to Detect Interactions and Correlations in Gene-Environment Studies." *Scientific Studies of Reading Special Issue: "Computational and statistical modeling of reading difficulties: Tackling mechanisms."*

Other Scholarly Output:

Bartlett CW. "BioVis 2011 eQTL Contest Dataset." Version 1.1. May 2011. Last Updated May 2011. <http://www.biovis.net/2011/contest.html>.

Explanation: I was asked to generate a realistic human genetics dataset. I therefore used data from real human brain eQTL datasets and through a novel data shuffling technique that I developed, created a dataset that preserved real biological truth while injecting a simulated gene network that would provide a known standard for contestant entries to be judged

Bartlett CW. "BioVis 2012 eQTL Contest Dataset Phase II." Version 1.0. March 2012. <http://www.biovis.net/contest/>.

Explanation: This is a larger and complex simulation that extends the concepts from the 2011 datasets. There are roughly 100 times more datapoints in this simulation that includes gene expression values from two tissues and information on all genetic variants within 30 genes. The 2012 data was generated using a slightly improved data shuffling technique that I initially developed in 2011.

Past, Pending, and Current Research Experience and Support:

Current

Molecular Genetics of Language Related Cognition in Families (2010-2015; NIH/NIDCD)
\$3,501,664

SLI susceptibility allele discovery by applying a combination of multi-level approaches including ascertainment of new families and extensive molecular work on families from previous funding periods.

Role: Principle Investigator

Behavioral and Genetic Biomarker Development for Autism and Related Disorders (2012-2017; New Jersey Governor's Council for Medical Research and Treatment of Autism)
\$446,950.

A continuation of *Behavioral and Genetic Biomarker Development for Autism and Related Disorders* (below). Disease gene discovery through analysis of phenotypic and genetic data from a set of families with at least one individual with autism and additional family members who exhibit components of the broad autism phenotype, specifically, language impairment.

Role: Co-Investigator (Subcontract PI)

Elucidating the Neurogenetic Architecture of Language Impairments with/without Autistic Symptoms (2011-2014; Ohio Supercomputer Center)

2,500,000 hour allocation

Allocation of 2.5 million CPU hours of access to the largest academic supercomputer in Ohio for the computation of genetic models in all of lab's ongoing disease gene discovery projects.

Role: Principle Investigator

Finding genetic variants that predict and influence epilepsy treatments and surgical outcomes (2012-2014; NCH Translational Research Pilot Grant)

\$25,000

An eQTL study performed on epilepsy tissue resections to discover biomarkers for treatment.

Role: Principle Investigator (dual-PI grant with Dr. Hamiwka)

Child prodigies may provide a genetic clue for autism. (2012-2014; Ingram Autism Fund)

\$50,000

Collecting DNA from pedigrees that have both autism and prodigy for linkage analysis with prodigy/autism as well as several related endophenotypes.

Role: Co-Investigator (Subcontract PI)

Past

Behavioral and Genetic Biomarker Development for Autism and Related Disorders (2009-2012; NIH/NIMH)

\$178,123.

A continuation of *Genetic Components of Autism Spectrum Disorders* (below). Disease gene discovery through analysis of phenotypic and genetic data from a set of families with at least one individual with autism and additional family members who exhibit components of the broad autism phenotype, specifically, language impairment.

Role: Co-Investigator (Subcontract PI)

Elucidating the Neurogenetic Architecture of Language Impairments with/without Autistic Symptoms Using Vieland's PPL Framework (2009-2011; Ohio Supercomputer Center)

2,500,000 hour allocation

Allocation of 2 million CPU hours of access to the largest academic supercomputer in Ohio for the computation of genetic models in all of lab's ongoing disease gene discovery projects.

Role: Principle Investigator

Genetic Components of Autism Spectrum Disorders (2003-2009; NIH/NIMH) \$2,467,860

Disease gene discovery through new family ascertainment with at least one individual with autism and additional family members who exhibit components of the broad autism phenotype, specifically, language impairment.

Role: Co-Investigator

Localization of Genes Negatively Influencing Language Acquisition (2001-2003; National Alliance for Autism Research).

A study of genetic markers in autism regions using language impaired samples to assess possible genetic overlap.

Role: Principle Investigator

Currently Pending

Discovery of Autism Communication Modifier Genes by Pedigree Genome Sequencing

(2014-2019; NIH/NIDCD) \$596,478

Role: Principal Investigator

Pragmatic Trial of Teletherapy Versus Face-to-face for Child Language Impairment

(2014-2019; NIH/NIDCD) \$2,587,109

Role: Principal Investigator

Molecular Genetics of the Rare Prodigy Trait Intersecting with Idiopathic Autism

(2014-2017; NIH/NIMH) \$918,250

Role: Principal Investigator