Curriculum Vitae
Qi Yan

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https://qiyanpitt.github.io/

IMMIGRATION STATUS

U.S. Permanent Resident

EDUCATION

2018-	**Research Assistant Professor** in **Pediatrics**
	UPMC Children's Hospital of Pittsburgh, University of Pittsburgh, Pittsburgh, PA
2017-2018	**Research Instructor** in **Pediatrics**
	UPMC Children's Hospital of Pittsburgh, University of Pittsburgh, Pittsburgh, PA
2014-2016	**Post-Doctoral Fellow** in **Pediatrics** (Mentors: Daniel E. Weeks and Wei Chen)
	UPMC Children's Hospital of Pittsburgh, University of Pittsburgh, Pittsburgh, PA
2011-2014	**Ph.D. of Science** in **Biostatistics** (Mentor: Nianjun Liu)
	University of Alabama at Birmingham, Birmingham, AL
	Dissertation: Statistical Methods for Set-based Association Tests in Genetic Studies
2009-2011	**Master of Science** in **Biostatistics**
	University of Alabama at Birmingham, Birmingham, AL
2007-2009	**Master of Science** in **Biomedical Engineering (Bioinformatics)**
	University of Alabama at Birmingham, Birmingham, AL
2003-2007	**Bachelor of Science** in **Biomedical Engineering**
	Beijing Institute of Technology, Beijing, China

AWARDS

2015	**2014 Best Paper Award - UAB from the Science Unbound Foundation**
2011	**Research Fellowship Award from Department of Biostatistics**
2009	**Research Fellowship Award from Department of Biomedical Engineering**
2007	**Research Fellowship Award from Department of Biomedical Engineering**

PROFESSIONAL EXPERIENCE

2017-	**Department of Pediatrics, University of Pittsburgh, PA**
	Research Assistant Professor/Research Instructor

My active research projects include: 1. Development of statistical and computational methods for high throughput genetic and genomic data; 2. Genetic studies of Age-related Macular Degeneration (AMD), Asthma, Chronic Obstructive Pulmonary Disease (COPD) and Alzheimer Disease; 3. Transcriptome (RNAseq) studies in Asthma and Localized Scleroderma (LS); 4. Deep-learning in AMD risk prediction.

- Develop statistical algorithms and related software packages.
- Write independent research grants.
- Collaborate with several research teams, perform statistical analysis and write scientific manuscripts.

2014-2016	**Department of Pediatrics, University of Pittsburgh, PA**

Postdoctoral Research

My research projects included: 1. Development of statistical and computational methods for high throughput genetic and genomic data; 2. Genetic studies of AMD; 3. Genetic studies of Asthma and COPD in Hispanics; 4. Investigation of the impact of sequencing errors on family-based gene mapping; 5. DNA-seq, RNA-seq and Methylation analysis

- Develop statistical algorithms and related software packages.
- Collaborate with several research teams, perform statistical analysis and write scientific manuscripts.

2011-2014 **Department of Biostatistics, University of Alabama at Birmingham, Birmingham, AL**
Doctoral Dissertation Research

This dissertation research focuses on developing statistical methods for set-based association tests at both pathway and gene levels in genetic studies. In the first study, we proposed a novel way for pathway analysis that assesses the effects of genes using the sequence kernel association test (SKAT) and the effects of pathways via an extended adaptive-rank-truncated product statistic. In the second study, we proposed an analytical method based on kernel machine regression to be applicable for longitudinal data. In the third study, we proposed an analytical method to be applicable for familial data with various types of phenotypes based on generalized linear mixed model.

- Collaborate with mentor to develop statistical algorithms and associated software packages.
- Perform data analysis and write professional manuscripts.

2013-2014 **Department of Biostatistics, University of Alabama at Birmingham, Birmingham, AL**
NSF Graduate Research

We try to determine whether genetic markers of autoimmunity validated in European and Asian populations influence the occurrence of Rheumatoid Arthritis (RA) in African Americans, determine whether genetic markers of RA susceptibility play a role in radiographic severity in African Americans and develop and test predictive models for RA risk and outcome using clinical and genomic data in African Americans.

- Conducted statistical analysis of GWAS at marker and gene levels.
- Reported research results at internal meetings.

2010-2011 **Department of Biostatistics, University of Alabama at Birmingham, Birmingham, AL**
Master's Thesis Research

We evaluated the influence of race and gender on therapeutic warfarin dose, anticoagulation control and most importantly risk of major hemorrhage from prospective inception cohort of chronic warfarin users.

- Conducted research in interdisciplinary groups
- Reported research results at internal meetings.
- Provided statistical support to medical doctors with their projects and grant preparation.

2010-2011 **Department of Epidemiology, University of Alabama at Birmingham, Birmingham, AL**
Research Assistant

I participated in two projects. 1. A genome-wide association study (GWAS) of carotid atherosclerosis in HIV-infected men. 2. A Comparison of Principal Component Analysis Using Autosomal Variants with Phylogeny Based on Y-chromosome and Mitochondrial Markers.

- Provided insight, regular and ad-hoc reporting backed by solid analysis and documentation.
- Manipulated and maintained large-scale genetic data.
- Worked on multiple large projects to perform in a cross-functional team.

2007-2009 **Department of Biomedical Engineering, University of Alabama at Birmingham, Birmingham, AL**
Research Assistant

We investigated the structural insights for Thrombospondin-1 binding to Calreticulin by using Molecular Dynamics technique.

- Worked with supervisor to investigate the properties of Molecular Dynamics of proteins.

- Reported research results in the manuscripts professionally.

TEACHING EXPERIENCE

2019 spring **Invited Lecturer**
Foundations of Translational Bioinformatics (BIOINF 2016)
Genome-wide Association Study; Analysis of Next Generation Sequence Data (2 hours)
Department of Biomedical Informatics, University of Pittsburgh, Pittsburgh, PA

2017 winter **Invited Lecturer**
Introductory high-throughput genomic data analysis I: data mining and applications (BIOST 2055)
Genome-wide Association Study; Analysis of Next Generation Sequence Data; Lab (3 hours)
Department of Biostatistics, University of Pittsburgh, Pittsburgh, PA

2016 spring **Invited Lecturer**
Introductory high-throughput genomic data analysis I: data mining and applications (BIOST 2055)
Genome-wide Association Study; Analysis of Next Generation Sequence Data; Lab (3 hours)
Department of Biostatistics, University of Pittsburgh, Pittsburgh, PA

2016 spring **Invited Lecturer**
Applied mixed models analysis (BIOST 2086)
Rare-Variant Kernel Machine Test (1 hour)
Department of Biostatistics, University of Pittsburgh, Pittsburgh, PA

2015 spring **Invited Lecturer**
Introductory high-throughput genomic data analysis I: data mining and applications (BIOST 2055)
Genome-wide Association Study; Analysis of Next Generation Sequence Data; Lab (3 hours)
Department of Biostatistics, University of Pittsburgh, Pittsburgh, PA

2013 fall **Graduate Teaching Assistant**
Inter Statistical Analysis II (BST612)
Department of Biostatistics, University of Alabama at Birmingham, Birmingham, AL

2012 spring **Graduate Teaching Assistant**
Inter Statistical Analysis I (BST611)
Department of Biostatistics, University of Alabama at Birmingham, Birmingham, AL

PEER REVIEWED PUBLICATIONS

1. **Yan, Q.**, Weeks, D.E., Xin, H., Swaroop, A., Chew, E.Y., Huang, H., Ding, Y., and Chen, W. (2020). Deep-learning-based Prediction of Late Age-Related Macular Degeneration Progression. Nature Machine Intelligence, in press.
2. Forno, E., Zhang, R., Jiang, Y., Kim, S., **Yan, Q.**, Ren, Z., Han, Y.Y., Boutaoui, N., Rosser, F., Weeks, D.E., Acosta-Pérez, E., Colón-Semidey, A., Alvarez, M., Canino, G., Chen, W., Celedón, J.C. (2020). Gene expression in nasal epithelium and asthma in children: a transcriptome-wide and differential expression network analysis. *J Allergy Clin Immunol*, accepted.
3. Kim, S., Forno, E.; **Yan, Q.**, Jiang, Y., Zhang, R., Boutaoui, N., Acosta-Perez, E., Canino, G., Chen, W., Celedon, J.C. (2019). SNPs identified by GWAS affect asthma risk through DNA methylation and expression of *cis*-genes in airway epithelium. Eur Respir J doi:10.1183/13993003.02079-2019.

4. **Yan, Q.**, Liu, N., Forno, E., Canino, G., Celedon, J.C., and Chen, W. (2019). An integrative association method for omics data based on a modified Fisher's method with application to childhood asthma. PLoS Genet 15, e1008142.

5. Mandel, J., Wang, H., Normolle, D.P., Chen, W., **Yan, Q.**, Lucas, P.C., Benos, P.V., and Prochownik, E.V. (2019). Expression patterns of small numbers of transcripts from functionally-related pathways predict survival in multiple cancers. BMC Cancer 19, 686.

6. Rajakumar, K., **Yan, Q.**, Khalid, A.T., Feingold, E., Vallejo, A.N., Demirci, F.Y., and Kamboh, M.I. (2019). Gene Expression and Cardiometabolic Phenotypes of Vitamin D-Deficient Overweight and Obese Black Children. Nutrients 11.

7. Kamboh, M.I.*, Fan, K.H.*, **Yan, Q.***, Beer, J.C., Snitz, B.E., Wang, X., Chang, C.H., Demirci, F.Y., Feingold, E., and Ganguli, M. (2019). Population-based genome-wide association study of cognitive decline in older adults free of dementia: identification of a novel locus for the attention domain. Neurobiol Aging. *co-first-author.

8. Jiang, Y., Chiu, C., **Yan, Q.**, Chen, W., Gorin, M.B., Conley, Y.P., Lakhal-Chaieb, M.L., Cook, R.J., Amos, C.I., Wilson, A.F., et al. (2019). Gene-based Association Testing of Dichotomous Traits with Generalized Linear Mixed Models Using Extended Pedigrees. Conditionally accepted in JASA.

9. Forno, E.*, Wang, T.*, Qi, C.*, **Yan, Q.**, Xu, C.J., Boutaoui, N., Han, Y.Y., Weeks, D.E., Jiang, Y., Rosser, F., et al. (2019). DNA methylation in nasal epithelium, atopy, and atopic asthma in children: a genome-wide study. Lancet Respir Med 7, 336-346.

10. **Yan, Q.**, Nho, K., Del-Aguila, J.L., Wang, X., Risacher, S.L., Fan, K.H., Snitz, B.E., Aizenstein, H.J., Mathis, C.A., Lopez, O.L., et al. (2018). Genome-wide association study of brain amyloid deposition as measured by Pittsburgh Compound-B (PiB)-PET imaging. Mol Psychiatry.

11. **Yan, Q.**, Ding, Y., Liu, Y., Sun, T., Fritsche, L.G., Clemons, T., Ratnapriya, R., Klein, M.L., Cook, R.J., Liu, Y., et al. (2018). Genome-wide analysis of disease progression in age-related macular degeneration. Hum Mol Genet 27, 929-940.

12. **Yan, Q.**, Fang, Z., and Chen, W. (2018). KMgene: a unified R package for gene-based association analysis for complex traits. Bioinformatics 34, 2144-2146.

13. Wen, X.*, Liu, Y.*, **Yan, Q.***, Liang, M., Tang, M., Liu, R., Pan, J., Liu, Q., Chen, T., Guo, S., et al. (2018). Association of IGFN1 variant with polypoidal choroidal vasculopathy. J Gene Med 20, e3007. *co-first-author.

14. Fang, Z., Ma, T., Tang, G., Zhu, L., **Yan, Q.**, Wang, T., Celedon, J.C., Chen, W., and Tseng, G.C. (2018). Bayesian integrative model for multi-omics data with missingness. Bioinformatics 34, 3801-3808.

15. Burkart, K.M., Sofer, T., London, S.J., Manichaikul, A., Hartwig, F.P., **Yan, Q.**, Soler Artigas, M., Avila, L., Chen, W., Davis Thomas, S., et al. (2018). A Genome-Wide Association Study in Hispanics/Latinos Identifies Novel Signals for Lung Function. The Hispanic Community Health Study/Study of Latinos. Am J Respir Crit Care Med 198, 208-219.

16. Forno, E., Wang, T., **Yan, Q.**, Brehm, J., Acosta-Perez, E., Colon-Semidey, A., Alvarez, M., Boutaoui, N., Cloutier, M.M., Alcorn, J.F., et al. (2017). A Multiomics Approach to Identify Genes Associated with Childhood Asthma Risk and Morbidity. Am J Respir Cell Mol Biol 57, 439-447.

17. Ding, Y., Liu, Y., **Yan, Q.**, Fritsche, L.G., Cook, R.J., Clemons, T., Ratnapriya, R., Klein, M.L., Abecasis, G.R., Swaroop, A., et al. (2017). Bivariate Analysis of Age-Related Macular Degeneration Progression Using Genetic Risk Scores. Genetics 206, 119-133.

18. **Yan, Q.**, Brehm, J., Pino-Yanes, M., Forno, E., Lin, J., Oh, S.S., Acosta-Perez, E., Laurie, C.C., Cloutier, M.M., Raby, B.A., et al. (2017). A meta-analysis of genome-wide association studies of asthma in Puerto Ricans. Eur Respir J 49. **With an accompanying Editorial.**

19. Forno, E., Sordillo, J., Brehm, J., Chen, W., Benos, T., **Yan, Q.**, Avila, L., Soto-Quiros, M., Cloutier, M.M., Colon-Semidey, A., et al. (2017). Genome-wide interaction study of dust mite allergen on lung function in children with asthma. J Allergy Clin Immunol 140, 996-1003 e1007.

20. Danila, M.I., Laufer, V.A., Reynolds, R.J., **Yan, Q.**, Liu, N., Gregersen, P.K., Lee, A., Kern, M., Langefeld, C.D., Arnett, D.K., et al. (2017). Dense Genotyping of Immune-Related Regions Identifies Loci for Rheumatoid Arthritis Risk and Damage in African Americans. Mol Med 23, 177-187.

21. Wang, L., Pan, D., **Yan, Q.**, and Song, Y. (2017). Activation mechanisms of alphaVbeta3 integrin by binding to fibronectin: A computational study. Protein Sci 26, 1124-1137.

22. Chen, W., Wang, T., Pino-Yanes, M., Forno, E., Liang, L., **Yan, Q.**, Hu, D., Weeks, D.E., Baccarelli, A., Acosta-Perez, E., et al. (2017). An epigenome-wide association study of total serum IgE in Hispanic children. J Allergy Clin Immunol 140, 571-577.

23. **Yan, Q.**, Chen, R., Sutcliffe, J.S., Cook, E.H., Weeks, D.E., Li, B., and Chen, W. (2016). The impact of genotype calling errors on family-based studies. Sci Rep 6, 28323.

24. **Yan, Q.**, Weeks, D.E., Tiwari, H.K., Yi, N., Zhang, K., Gao, G., Lin, W.Y., Lou, X.Y., Chen, W., and Liu, N. (2015). Rare-Variant Kernel Machine Test for Longitudinal Data from Population and Family Samples. Hum Hered 80, 126-138.

25. **Yan, Q.**, Weeks, D.E., Celedon, J.C., Tiwari, H.K., Li, B., Wang, X., Lin, W.Y., Lou, X.Y., Gao, G., Chen, W., et al. (2015). Associating Multivariate Quantitative Phenotypes with Genetic Variants in Family Samples with a Novel Kernel Machine Regression Method. Genetics 201, 1329-1339. **Chosen by the GENETICS Editors as one of the December 2015 Highlights.**

26. Fan, R.*, Wang, Y.*, **Yan, Q.***, Ding, Y., Weeks, D.E., Lu, Z., Ren, H., Cook, R.J., Xiong, M., Swaroop, A., et al. (2016). Gene-Based Association Analysis for Censored Traits Via Fixed Effect Functional Regressions. Genet Epidemiol 40, 133-143. *co-first-author.

27. Brehm, J.M., Man Tse, S., Croteau-Chonka, D.C., Forno, E., Litonjua, A.A., Raby, B.A., Chen, W., **Yan, Q.**, Boutaoui, N., Acosta-Perez, E., et al. (2015). A Genome-Wide Association Study of Post-bronchodilator Lung Function in Children with Asthma. Am J Respir Crit Care Med 192, 634-637.

28. Limdi, N.A., Brown, T.M., **Yan, Q.**, Thigpen, J.L., Shendre, A., Liu, N., Hill, C.E., Arnett, D.K., and Beasley, T.M. (2015). Race influences warfarin dose changes associated with genetic factors. Blood 126, 539-545. **With an accompanying Editorial.**

29. **Yan, Q.**, Tiwari, H.K., Yi, N., Gao, G., Zhang, K., Lin, W.Y., Lou, X.Y., Cui, X., and Liu, N. (2015). A Sequence Kernel Association Test for Dichotomous Traits in Family Samples under a Generalized Linear Mixed Model. Hum Hered 79, 60-68.

30. Chen, W., Brehm, J.M., Manichaikul, A., Cho, M.H., Boutaoui, N., **Yan, Q.**, Burkart, K.M., Enright, P.L., Rotter, J.I., Petersen, H., et al. (2015). A genome-wide association study of chronic obstructive pulmonary disease in Hispanics. Ann Am Thorac Soc 12, 340-348.

31. **Yan, Q.**, Tiwari, H.K., Yi, N., Lin, W.Y., Gao, G., Lou, X.Y., Cui, X., and Liu, N. (2014). Kernel-machine testing coupled with a rank-truncation method for genetic pathway analysis. Genet Epidemiol 38, 447-456. **2014 Best Paper Award - UAB from the Science Unbound Foundation.**

32. Shrestha, S., **Yan, Q.**, Joseph, G., Arnett, D.K., Martinson, J.J., and Kingsley, L.A. (2012). Replication of RYR3 gene polymorphism association with cIMT among HIV-infected whites. AIDS 26, 1571-1573.

33. Makowsky, R., **Yan, Q.**, Wiener, H.W., Sandel, M., Aissani, B., Tiwari, H.K., and Shrestha, S. (2012). The utility of mitochondrial and y chromosome phylogenetic data to improve correction for population stratification. Front Genet 3, 301.

34. **Yan, Q.**, McDonald, J.M., Zhou, T., and Song, Y. (2013). Structural insight for the roles of fas death domain binding to FADD and oligomerization degree of the Fas-FADD complex in the death-inducing signaling complex formation: a computational study. Proteins 81, 377-385.

35. Pan, D., **Yan, Q.**, Chen, Y., McDonald, J.M., and Song, Y. (2011). Trifluoperazine regulation of calmodulin binding to Fas: a computational study. Proteins 79, 2543-2556.

36. **Yan, Q.**, Murphy-Ullrich, J.E., and Song, Y. (2011). Molecular and structural insight into the role of key residues of thrombospondin-1 and calreticulin in thrombospondin-1-calreticulin binding. Biochemistry 50, 566-573.

37. **Yan, Q.**, Murphy-Ullrich, J.E., and Song, Y. (2010). Structural insight into the role of thrombospondin-1 binding to calreticulin in calreticulin-induced focal adhesion disassembly. Biochemistry 49, 3685-3694.

BOOK CHAPTERS

1. Novel Methods for Family-Based Genetic Studies (pages 135-144), GENETIC EPIDEMIOLOGY (Methods and Protocols). Springer, 2018.

MANUSCRIPTS UNDER REVIEW OR REVISION

1. **Qi Yan**, Erick Forno, Esther Herrera-Luis, Maria Pino-Yanes, Sam Oh, Edna Acosta-Pérez, Donglei Hu, Celeste Eng, Scott Huntsman, José R. Rodriguez-Santana, Michelle M. Cloutier, Glorisa Canino, Esteban G. Burchard, Wei Chen, Juan C. Celedón. "A genome-wide association analysis of asthma hospitalizations" Under review in *J Allergy Clin Immunol*.

2. **Qi Yan**, Yale Jiang, Heng Huang, Anand Swaroop, Emily Y. Chew, Daniel E. Weeks, Wei Chen, Ying Ding. "GWAS-based Machine Learning for Prediction of Age-Related Macular Degeneration Risk". Under review in *Journal of the Royal Statistical Society, Series A*. Preprint is available at medRxiv (doi: https://doi.org/10.1101/19006155)

3. Hongyi Xin, **Qi Yan**, Yale Jiang, Qiuyu Lian, Jiadi Luo, Carla Erb, Richard Duerr, Kong Chen, and Wei Chen. "Sample Demultiplexing, Multiplet Detection, Experiment Planning and Novel Cell Type Verification in Single Cell Sequencing". Under revision in *Genome Biology*. Preprint is available at bioRxiv (doi: http://dx.doi.org/10.1101/828483)

READY FOR SUBMISSION

1. **Qi Yan**, Erick Forno, Esther Herrera-Luis, Maria Pino-Yanes, Raimon Rios, Sam Oh, Edna Acosta-Pérez, Donglei Hu, Celeste Eng, Scott Huntsman, Lydiana Avila, Nadia Boutaoui, Michelle M. Cloutier, Manuel E. Soto-Quiros, Scott T. Weiss, Jessica Lasky-Su, Camila Figueiredo, Mauricio L. Barreto, Glorisa Canino, Wei Chen, Esteban G. Burchard, Juan C. Celedón. "*PRKCH* and severe asthma exacerbations in Latino children".

2. **Qi Yan**, Erick Forno, Andres Cardenas, Cancan Qi, Yueh-Ying Han, Edna Acosta-Pérez, Rong Zhang, Nadia Boutaoui, Glorisa Canino, Judith M. Vonk, Cheng-jian Xu, Wei Chen, Emily Oken, Diane R. Gold, Gerard H. Koppelman, Juan C. Celedón. "Exposure to violence, chronic stress, nasal DNA methylation, and asthma in children".

PRESENTATIONS

1. **Yan Q.** "Deep-learning-based Prediction of Late Age Related Macular Degeneration Progression" ASHG Conference. Poster. October 17, 2019

2. **Yan Q.** "KMgene: a unified R package for gene-based association analysis for complex traits" ASHG Conference. Poster. October 19, 2018

3. **Yan Q.** "Genome-wide analysis of age-related macular degeneration progression" ASHG Conference. Poster. October 19, 2017

4. **Yan Q.** "An Omnibus Test for Gene-Level Effects of Multi-Omics Data with Application to Childhood Asthma" ICSA Conference (Shanghai, China). Platform talk. December 22, 2016

5. **Yan Q.** "Associating Multivariate Quantitative Phenotypes with Genetic Variants in Family Samples with a Novel Kernel Machine Regression Method" ICSA Conference (Atlanta, GA). Platform talk. June 13, 2016

6. **Yan Q.** "Set-based Methods for DNA Methylation Analysis" ASHG Conference. Poster. October 8, 2015

7. **Yan Q**. "Rare-Variant Kernel Machine Test for Longitudinal Data for Population and Family Samples" JSM Conference. Platform talk. August 12, 2015

8. **Yan Q**. "Sequence kernel association test for multivariate quantitative phenotype in family samples" ASHG Conference. Platform talk. October 19, 2014

9. **Yan Q**. "Kernel Machine Testing Coupled with Rank Truncation Method for Genetic Pathway Analysis" JSM Conference.

Platform talk. August 4, 2013

REVIEWS

Guest editor, the supplement of Big Data Analytics for Health, 2015
Editorial Board, Frontiers in Genetics, 2014
Reviewer, European Respiratory Journal, 2019
Reviewer, Chest, 2019
Reviewer, Frontiers in Genetics, 2019
Reviewer, Plos One, 2015, 2018
Reviewer, Meta Gene, 2017
Reviewer, Scientific Reports, 2016, 2018
Reviewer, Human Heredity, 2016
Reviewer, Bioinformatics, 2015
Reviewer, Human Genetics, 2015,2017, 2018
Reviewer, Genetic Epidemiology, 2015, 2018
Reviewer, Statistics and Its Interface, 2015
Reviewer, International Journal of Cancer, 2015
Reviewer, Mediators of Inflammation, 2015
Reviewer, Biometrics & Biostatistics International Journal, 2015
Reviewer, Annals of Nutrition and Metabolism, 2014
Reviewer, Annals of Human Genetics, 2014
Reviewer, Colombian Journal of Statistics, 2014

GRANTS

K01 HL138098 (NHLBI)　　　　　*Principal Investigator*　　　　　*04/15/2018 – 03/31/2023*
Novel Methods for Analysis of Genetic and Epigenetic Studies of Childhood Asthma
Total cost: $714,630

RAC UPMC/University of Pittsburgh　　　　　*Principal Investigator*　　　　　*01/01/2016 – 12/31/2016*
Novel Methods for Analysis of Genetic and Epigenetic Studies of Childhood Asthma
Total cost: $45,100

R01 HL153050 (NHLBI)　　　　　*Principal Investigator*　　　　　*10/05/2019 (submitted)*
Prediction with Genetics, Epigenetics and Clinical Images in Complex Lung Diseases

TECHNICAL SKILLS

Proficiency with R programming
Proficiency with UNIX environment and related programming languages: Shell, Python, Perl

SOFTWARE

1. KMgene: a unified R package for gene-based association analysis for complex traits
   (https://cran.r-project.org/web/packages/KMgene/index.html)
2. An integrative association method for omics data based on a modified Fisher's method
   (https://cran.r-project.org/web/packages/OmnibusFisher/index.html)
3. Late AMD Fundus Image Prediction
   (http://www.pitt.edu/~qiy17/amdprediction.html); (https://github.com/QiYanPitt/AMDprogressCNN)
4. Computer-Aided Risk Estimation for Any Age-related Macular Degeneration in Caucasians
   (https://yanq.shinyapps.io/no_vs_amd_NN/)
5. DoubleWeightSKAT-ARTP: Pathway Based Method Testing the Significance of a Pathway
   (http://www.pitt.edu/~qiy17/Softwares/DoubleWeightSKAT-ARTP.zip)

PROFESSIONAL ORGANIZATIONS

Member, American Society of Human Genetics, 2014-.

Member, American Statistical Association, 2013-.

Member, Professional Development Committee in Department of Biostatistics at UAB, 2012-2014.

Vice President, Chinese Student and Scholar Association at UAB, 2012-2013.