CURRICULUM VITAE

NAME Mei Wang Baker, MD, FACMG

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Wisconsin State Laboratory of Hygiene
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EDUCATION

Undergraduate *Medical school included relevant undergraduate education in China at that time.*

Graduate / Medical School

1978-1983 MD, Department of Medicine, Anhui Medical University
Hefei, China

Residency

1983-1985 Radiology Residency, Anhui Provincial Hospital
Hefei, China

1985-1989 Internal Medicine Residency, Anhui Provincial Hospital
Hefei, China

Postgraduate / Fellowship

1992-1995 Munroe-Meyer Institute Connective Tissue Disease Research Laboratory
University of Nebraska Medical Center, Omaha

2005-2007 Clinical Biochemical Genetics Fellowship
University of Wisconsin-Madison

BOARD CERTIFICATION

2009 American Board of Medical Genetics (Clinical Biochemical Genetics)

PRESENT APPOINTMENT / POSITIONS

4/2016-Present	Professor (CHS) Department of Pediatrics University of Wisconsin School of Medicine and Public Health
1/2013-3/2016	Associate Professor (CHS) Department of Pediatrics University of Wisconsin School of Medicine and Public Health
2013-Present	Co-Director Newborn Screening Laboratory, Wisconsin State Laboratory of Hygiene University of Wisconsin-Madison

PAST APPOINTMENTS / POSITIONS

2007-2012	Assistant Professor (CHS) Department of Pediatrics University of Wisconsin School of Medicine and Public Health
2010-2012	Science Director Newborn Screening Laboratory, Wisconsin State Laboratory of Hygiene University of Wisconsin-Madison
2007-2009	Science Advisor Newborn Screening Laboratory Wisconsin State Laboratory of Hygiene University of Wisconsin-Madison
2003-2004	Associate Scientist Newborn Screening Laboratory Wisconsin State Laboratory of Hygiene University of Wisconsin-Madison
2002-2003	Associate Scientist Department of Nutrition Science University of Wisconsin-Madison
2001-2002	Scientist Third Wave Technologies, Inc. Madison, Wisconsin
1999-2001	Assistant Professor Center for Human Molecular Genetics University of Nebraska Medical Center Omaha, Nebraska
1998-1999	Research Associate Genetics Department Boys Town National Research Hospital Omaha, Nebraska

1995-1998	Research Associate Munroe-Meyer Institute Connective Tissue Disease Research Laboratory University of Nebraska Medical Center Omaha, Nebraska
1989-1992	Chief Resident Physician Department of Internal Medicine Anhui Provincial Hospital, China
1985-1989	Resident Physician Department of Internal Medicine Anhui Provincial Hospital, China
1983-1985	Resident Physician, Department of Radiology Anhui Provincial Hospital, China

PROFESSIONAL SOCIETY MEMBERSHIPS

Fellow, American College of Medical Genetics
Member, Society for Pediatric Research

AWARDS AND HONORS

2014	Harry Hannon Laboratory Improvement Award in Newborn Screening Association of Public Health Laboratories (APHL)
2015	Election into the Society for Pediatric Research Council of the Society for Pediatric Research (SPR)

GRANT AND FUNDING SUPPORT

Ongoing Research Support

(no grant number) (PI: Baker, Mei Wang)
*** awarded, starting date pending**
Association of Public Health Laboratories
Peer Network Resource Center for New Disorder Newborn Screening
This grant will support second tier molecular testing using next generation sequencing technology through the Wisconsin Newborn Screening Program.

233-AAB5923 (PI: Baker, Mei Wang)
12/21/15 – ongoing
NBS SMA Biogen
Development of a Multiplex Newborn Screening Assay for SCID, XLA and SMA
Specific aims for this project are to 1) Evaluate the performance of a real-time PCR prototype assay in a newborn screening laboratory environment; and 2) Assess X-linked agammaglobulinemia and spinal muscular atrophy incidence rate using 40,000 de-identified residual routine newborn screening specimens.

133-PRJ92KC, The Legacy of Angels Foundation ($589,732)
10/1/2014-8/31/2016
Role: PI
Percentage of effort: 20%
A Prospective Study of Newborn Screening for Cystic Fibrosis Using Novel IRT/Next Generation Sequencing Method
The purpose of the project is to evaluate the usefulness of expanded DNA analyses using a panel of 170-200 CFTR disease-causing mutations in newborn screening (NBS) for cystic fibrosis (CF) in a real-world NBS environment.

HHSN275201400010C, NIH-NICHD ($498,323)
9/26/2014-3/25/2017
Role: PI
Percentage of effort: 20%
Establishing a Newborn Screening Process for Early Identification and Treatment of Infants with Pompe Disease
The purpose of this project is to establish and evaluate a process of newborn screening for Pompe disease to facilitate early identification and treatment of infants with Pompe disease.

NIH-NICHD ($3,459,567)
7/1/2015-6/30/2020
Role: Co-investigator
Percentage of effort: 5%
FMR1 Premutation Phenotypes in Population-Based & Clinically-Ascertained Samples
The proposed research will characterize the FMR1 premutation phenotype in premutation carrier mothers of children with and without fragile X syndrome (FXS) diagnoses and controls.

Biogen ($149,599)
9/7/2015-12/30/2019
Percentage of effort 20%

Development of a Newborn Screening Method for Spinal Muscular Atrophy

<u>Completed Research Support</u>

133-PRJ65LL, The Legacy of Angels Foundation ($415,273)
10/1/2012-5/31/2014
Role: PI
Percentage of effort: 15% in year one, and 30% in year two
Improving IRT/DNA Newborn Screening for Cystic Fibrosis to Reduce False Positives by a New Molecular Strategy
The purpose of this project was to develop a three-tier IRT/DNA CF screening protocol that will significantly reduce false positive results caused by identification of CF heterozygote carrier infants; it will also create the potential opportunity to prevent most false negative results.

133-PRJ35GM, Hartwell Foundation ($300,000)
1/1/2010-3/31/2013
Role: Collaborator
Percentage of effort: 5%
Genetics of the Innate Immune Response of the Infant as a Potential Biomarker for Premature Birth

The hypothesis of this study was that the alterations of Toll-like receptor (TLR) pathway are important biological markers for, and therapeutic targets in, the fight for healthy babies by preventing premature birth and its complications.

131323/130845, DHHS-Health Resources and Services Administration ($150,000)
7/1/2010-5/31/2012
Role: PI
Percentage of effort: 10% in year one, and 30% in year two.
Development of Newborn Screening Assay for Congenital CMV Infection
The goal of this project was to develop a sensitive screening assay for congenital CMV infection, and further explore the possibility of combining SCID screening and congenital CMV infection assays into a multiplexing format, an assay that would simultaneously screen for SCID and congenital CMV infection.

AUCD RT01 2009-999-22, Centers for Disease Control and Prevention ($392,086)
10/1/2009-6/30/2012
Role: Investigator
Percentage of effort: 10% in year one, and 15% in year two
Prevalence of the Fragile X Premutation
This project provided new knowledge about the prevalence of the premutation of fragile X syndrome.

UNH/U22 MC10980/08-067, DHHS-Health Resources and Services Administration ($93,039)
6/1/2008-5/31/2012
Role: Collaborator
Percentage of effort: 10%
Multicenter Validation of Algorithms to Improve Communication of Positive Newborn Screening Results to the Medical Home
The goal of this project was to maximize the utility of screening test data generated from tandem mass spectrometry, and to provide better information for follow-up decision making on presumed newborn screening positives.

U01 EH000365, Centers for Disease Control and Prevention ($1,439,068)
9/30/2008-9/29/2011
Role: Co-PI
Percentage of effort: 30%
WI State Public Health Lab Capacity for SCID Screening
The project conducted research to develop, evaluate and/or improve routine newborn blood spot screening tests for forms of Severe Combined Immunodeficiency disorders (SCID).

PEER-REVIED PUBLICATIONS

1. Godfrey M, Vandemark N, **Wang M**, Velinov M, Wargowski D, Tsipouras P, Han J, Becker J, Robertson W, Droste S, Rao VH. Prenatal diagnosis and a donor splice site mutation in fibrillin in a family with Marfan syndrome. *Am J Hum Genetics.*1993;53:472-480.

2. **Wang M**, Price CE, Han J, Cisler J, Imaizumi K, Van Thienen MN, De Paepe A, Godfrey M. Recurrent mis-splicing of fibrillin exon 32 in two patients with neonatal Marfan syndrome. *Hum Mol Genetics*. 1995;4:607-613.

3. **Wang M**, Mata JE, Price CE, Iversen PL, Godfrey M. Prenatal and presymptomatic diagnosis of Marfan syndrome using fluorescence PCR and an automated sequencer. *Pren Diagn.* 1995;15:499-507.

4. **Wang M**, Kishnani P, Decker-Phillips M, Kahler SG, Godfrey M. Double mutant alleles in the FBN1 gene in a case of neonatal Marfan syndrome. *J Med Genetics.*1996;33:760-763.

5. **Wang M**, Clericuzio CL, Godfrey M. Familial occurrence of typical and severe lethal congenital contractural arachnodactyly caused by missplicing of exon 34. *Am J Hum Genetics.* 1996;59:1027-1034.
6. **Wang M**, Wang J-Y, Imaizumi K, Burton BK, Jones MC, Lamberti JJ, Godfrey M. Three novel fibrillin mutations in exons 25 and 27: classic versus neonatal Marfan syndrome. *Hum Mutat.* 1997;9:359-362.

7. **Wang M**, Mathews K, Imaizumi K, Beiraghi S, Blumberg B, Scheuner M, Graham J, Godfrey M. P1148A in fibrillin-1 is not a mutation anymore. *Nat Genetics.*1997;15:12.

8. Bridge JA, Fidler ME, Neff JR, Degenhardt J, **Wang M**, Walker C, Dorfman HD, Baker KS, Seemayer TA. Adamantinoma-like Ewing's sarcoma: genetic confirmation, phenotypic drift. *Am J Surg Pathol*. 1999;23(2):159-165.

9. Watnick T, Phakdeekitcharoen B, Johnson A, Gandolph M, **Wang M**, Briefel G, Klinger KW, Kimberling W, Gabow P, Germino GG. Mutation detection of PKD1 identifies a novel mutation common to three families with aneurysms and/or very-early-onset disease. *Am J Hum Genetics*. 1999;65(6):1561-1571.

10. Belleh S, Zhou G, **Wang M**, Kaloustian VM, Pagon RA, Godfrey M. Two novel fibrillin-2 mutations in congenital contractural arachnodactyly. *Am J Med Genetics*. 2000;92:7-12.

11. Shaw GM, Lammer EJ, Zhu H, **Baker MW**, Neri E, Finnell RH. Maternal periconceptional vitamin use, genetic variation of infant reduced folate carrier (A80G), and risk of spina bifida. *Am J Med Genetics*. 2002;108(1):1-6.

12. Croen LA, Shaw GM, Barber RC, **Baker MW**, Finnell RH, Lammer EJ. Apolipoprotein B and apolipoprotein E genotypes and sporadic holoprosencephaly. *Am J Med Genetics*. 2002;108(1):75-77.

13. Johnson SC, Marshall DJ, Harms G, Miller CM, Sherrill CB, Beaty EL, Lederer SA, Roesch EB, Madsen G, Hoffman GL, Laessig RH, Kopish GJ, **Baker MW**, Benner SA, Farrell PM, Prudent JR. Multiplexed genetic analysis using an expanded genetic alphabet. *Clin Chem*. 2004;50:2019-2027.

14. Puck JM, SCID Newborn Screening Working Group (Baker JC, **Baker MW**). Population-based newborn screening for severe combined immunodeficiency: steps toward implementation. J *Allergy Clin Immunol*. 2007;120(4):760-768.

15. **Baker MW**, Grossman WJ, Laessig RH, Hoffman GL, Brokopp CD, Kurtycz DF, Cogley MF, Litsheim TJ, Katcher ML, Routes JM. Development of a routine newborn screening protocol for severe combined immunodeficiency. *J Allergy Clin Immunol*. 2009;124(3):522-527.

16. Routes JM, Grossman WJ, Verbsky J, Laessig RH, Hoffman GL, Brokopp CD, **Baker MW**. Statewide newborn screening for severe T-cell lymphopenia. *JAMA*. 2009;302(22):2466-2471.

17. **Baker MW**, Laessig RH, Katcher ML, Grossman WJ, Verbsky J, Kurtycz DF, Brokopp CD. Implementing routine testing for severe combined immunodeficiencies within Wisconsin's newborn screening program. *Public Health Rep*. 2010;125(suppl 2):88-95.

18. **Baker MW**, Groose M, Hoffman G, Rock M, Levy H, Farrell PM. Optimal DNA tier for the IRT/DNA algorithm determined by CFTR mutation results over 14 years of newborn screening. *J Cyst Fibros*. 2011;Jul;10(4):278-281.

19. Knutsen AP, **Baker MW**, Markert LM. Interpreting low T-cell receptor excision circles (TRECs) in newborns with DiGeorge anomaly: importance of assessing naïve T-cell markers. *J Allergy Clin Immunol*. 2011;Dec;128(6):1375-1376.
    C: 50% M: 0% D: 20% A: 20% W: 20%

20. Accetta DJ, Brokopp CD, **Baker MW**, Verbsky J, Routes JM. Cause of death in neonates with inconclusive or abnormal T-cell receptor excision circle assays on newborn screening. *J Clin Immuno*l. 2011;Dec;31(6):962-927.

21. Verbsky JW, **Baker MW**, Grossman WJ, Hintermeyer M, Dasu T, Bonacci B, Reddy S, Margolis D, Casper J, Gries M, Desantes K, Hoffman GL, Brokopp CD, Seroogy CM, Routes JM. Newborn screening for severe combined immunodeficiency; the Wisconsin experience (2008-2011). *J Clin Immunol*. 2012;32:82-88.

22. Seltzer MM, **Baker MW**, Hong J, Maenner M, Greenberg J, Mandel D. Prevalence of CGG expansions of the FMR1 gene in a US population-based sample. *Am J Med Genetics B Neuropsychiatr Genetics*. 2012;Jul;159B(5):589-597.

23. Giampietro PF, **Baker MW,** Basehore MJ, Jones JR, Seroogy CM. Novel mutation in TP63 associated with ectrodactyly ectodermal dysplasia and clefting syndrome and T-cell lymphopenia. *Am J Med Genetics*. 2013;Jun;161A(6):1432-1435.

24. Maenner MJ, **Baker MW,** Broman KW, Tian J, Barnes JK, Atkins A, McPherson E, Hong J, Brilliant MH, Mailick MR. FMR1 CGG expansions: prevalence and sex ratios. *Am J Med Genetics*. 2013;Jul;162B(5):466-473.

25. Van Calcar SC, **Baker MW**, Williams PJ, Jones SA, Xiong B, Thao MC, et al. Prevalence and mutation analysis of short/branched chain acyl-CoA dehydrogenase deficiency (SBCADD) detected on newborn screening in Wisconsin. *Mol Genet Metab*. 2013;Sep-Oct;110(1-2):111-115.
    Sandra Van Calcar and Mei Baker have contributed equally to this article.

26. Held PK, Haynes CA, DeJesús VR, **Baker MW**. Development of an assay to simultaneously measure orotic acid, amino acids, and acylcarnitines in dried blood spots. *Clin Chim Acta*. 2014;Jun2;436C:149-154.

27. Doers ME, Musser MT, Nichol R, Berndt ER, **Baker MW**, Gomez TM, Zhang S-C, Abbeduto L, Bhattacharyya A. iPSC-derived forebrain neurons from FXS individuals show defects in initial neurite outgrowth. *Stem Cells Dev*. 2014;Aug 1;23(15):1777-1787.

28. Kwan A, Abraham RS, Currier R, Brower A, Andruszewski K, Abbott JK, **Baker M**, Ballow M, Bartoshesky LE, Bonilla FA, Brokopp C, Brooks E,Caggana M, Celestin J, Church JA, Comeau AM, Connelly JA, Cowan MJ, Cunningham-Rundles C, Dasu T, Dave N, De La Morena MT, Duffner U, Fong CT, Forbes L, Freedenberg D, Gelfand EW, Hale JE, Hanson IC, Hay BN, Hu D, Infante A, Johnson D, Kapoor N, Kay DM, Kohn DB, Lee R, Lehman H, Lin Z, Lorey F, Abdel-Mageed A, Manning A, McGhee S, Moore TB, Naides SJ, Notarangelo LD,Orange JS, Pai SY, Porteus M, Rodriguez R, Romberg N, Routes J, Ruehle M, Rubenstein

A, Saavedra-Matiz CA, Scott G, Scott PM, Secord E, Seroogy C, Shearer WT, Siegel S, Silvers SK, Stiehm ER, Sugerman RW, Sullivan JL, Tanksley S, Tierce ML IV, Verbsky J,Vogel B, Walker R, Walkovich K, Walter JE, Wasserman RL, Watson MS, Weinberg GA, Weiner LB, Wood H, Yates AB, Puck JM, Bonagura VR. Newborn screening for severe combined immunodeficiency in 11 screening programs in the United States. *JAMA*. 2014;Aug 20;312(7):729-738.

29. **Baker MW**, Atkins AE, Cordovado SK, Hendrix M, Earley MC, et al. Improving newborn screening for cystic fibrosis using next-generation sequencing technology: a technical feasibility study. *Genetics Med*. 2016 Mar; 18(3): 231-8. Epub 2015 Feb 12.

30. Pollock AJ, Allen, DB, Wiebe D, Eickhoff J, MacDonald M, and **Baker M.** Development of filter paper hemoglobin A1c assay applicable to newborn screening. *Clin Chim Acta*. 2016 Mar 23; 457:24-26.

31. Adamsheck HC, Petty EM, Hong J, **Baker MW**, Brilliant MH, and Mailick MR. Is Low FMR1 CGG Repeat Length in Males Correlated with Family History of BRCA-Associated Cancers? An Exploratory Analysis of Medical Records. *J Genet Counsel* (2017). doi:10.1007/s10897-017-0116-5.

CHAPTER IN BOOK

Wang M, Godfrey M. Prenatal and presymptomatic diagnosis of Marfan syndrome using fluorescence PCR and an automated sequencer. In: Stephen J. Meltzer, MD, ed. *PCR in Bioanalysis*. Totowa, NJ:Humane Press;1998:49-54.

COMMITTEES AND WORKGROUPS

State

2015	Member Wisconsin Newborn Screening Advisory Group Critical Congenital Heart Disease Committee
2014-Present	Member Wisconsin Newborn Screening Advisory Committee
2013-Present	Co-chair Wisconsin Newborn Screening Advisory Group Immunodeficiency Committee
2011-Present	Member Wisconsin Newborn Screening Advisory Group Hearing Screening Committee
2010-Present	Member Wisconsin Newborn Screening Advisory Group Umbrella Committee
2010-Present	Member Wisconsin Newborn Screening Advisory Group Metabolic Committee
2010-Present	Member Wisconsin Newborn Screening Advisory Group Cystic Fibrosis Committee
2008-2012	Member

National

2016	Member Advisory Committee on Heritable Disorders in Newborns and Children
2015 - 2017	Member Association of Public Health Laboratories NewSTEPs Steering Committee
2017	Chair Association of Public Health Laboratories NewSTEPs Steering Committee
2015	Member Newborn Screening Translational Research Network (NBSTRN) Steering Committee
2015	Member College of American Pathologists (CAP) Newborn Screening Workgroup
2015	Member The Advisory Committee on Heritable Disorders in Newborns and Children (ACHDNC) Cost of Newborn Screening Expansion Workgroup
2011-2017	Member Newborn Screening Molecular Subcommittee, Association of Public Health Laboratories and Centers for Disease Control and Prevention
2010-2014	Member, Newborn Screening Translational Research Network (NBSTRN) Laboratories Workgroup