

Dr. Saraswathy Nair

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Department of Health and Biomedical Sciences
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EDUCATION

PhD, University at Buffalo, The State University of New York, 1992
Major: Biological Sciences
Dissertation Title: Cloning, characterization and localization of a cell cycle regulated putative helicase p47, and the pIgA receptor in rat hepatocytes.

MA, University at Buffalo, The State University of New York, 1987
Major: Biological Sciences

MS, Annamalai University, 1985
Major: Marine Biology

BS, Kerala University, 1983
Major: Zoology
Areas of Emphasis: Botany, Chemistry

EMPLOYMENT

Academic - Administrative Assignments

SOM Co-Module Director, Endocrinology and Female Reproductive system, UTRGV School of Medicine (September 2015)

Academic - Post-Secondary

Associate Professor and Chair, UTRGV (September 2015)

Associate Professor and Chair, The University of Texas at Brownsville and Texas Southmost College (September 1, 2014 - August 31, 2015)

Associate Professor, The University of Texas at Brownsville and Texas Southmost College (September 1, 2012 - August 31, 2014)

Assistant Professor, The University of Texas at Brownsville and Texas Southmost College (September 1, 2006 - August 31, 2012)

Research Fellow, Albert Einstein College of Medicine, Bronx, NY (August 1992 - August 1996)

Teaching/Research Assistant, SUNY at Buffalo, NY (January 1986 - August 1991)

Government

Research Associate, NIDDK/ NIH, Phoenix, AZ (August 2001 - August 2006)

Professional

Director of R & D, Verigen, Inc., Scottsdale, AZ (September 1996 - June 1998)

PUBLICATIONS

Journal Articles

K Boeta-Lopez, Jorge Duran, D Elizondo, E Gonzales, Anne Rentfro, Andrea Schwarzbach, and Saraswathy Nair. Association of interleukin-6 polymorphisms with obesity or metabolic traits in young Mexican-Americans.. *Obesity science & practice*. 4, no. 1 (December 2017): 85-96.

V Peralta-Leal, E Leal-Ugarte, M Gutiérrez-Angulo, I Dávalos-Rodríguez, M Gallegos-Arreola, J Meza-Espinoza, H Torres-Benavides, J Peregrina-Sandoval, K Villarreal-Sotelo, M Ondarza Rodríguez, Saraswathy Nair, and J Durán-González. Promoter polymorphism of the serotonin transporter gene influences the number of sexual partners and smoking habits in a Mexican Mestizo population.. *Psychiatric genetics*. 25, no. 4 (August 2015): 178-9.

V Peralta-Leal, E Ugarte, V Gonzalez, M Angulo, I Dávalos-Rodríguez, M Gallegos-Arreola, L Gonzalez-Medellin, K Sotelo, Saraswathy Nair, and Jorge Duran. Serotonin gene (SLC6A4) 5-HTTLPR polymorphism associated with personality traits in a Mexican population. *J. Neuroscience Research*. (2014)

J Llongueras, Saraswathy Nair, D Salas-Leiva, and Andrea Schwarzbach. Comparing DNA extraction methods for analysis of botanical materials found in anti-diabetic supplements.. *Molecular biotechnology*. 53, no. 3 (March 2013): 249-56.

V Peralta-Leal, E Leal-Ugarte, J Meza-Espinoza, I Dávalos-Rodríguez, A Bocanegra-Alonso, R Acosta-González, E Gonzales, Saraswathy Nair, and Jorge Duran. Association of a serotonin transporter gene (SLC6A4) 5-HTTLPR polymorphism with body mass index categories but not type 2 diabetes mellitus in Mexicans.. *Genetics and molecular biology*. 35, no. 3 (2012): 589-93.

Saraswathy Nair, Y Muller, E Ortega, S Kobes, C Bogardus, and L Baier. Association analyses of variants in the DIO2 gene with early-onset type 2 diabetes mellitus in Pima Indians.. *Thyroid : official journal of the American Thyroid Association*. 22, no. 1 (January (1st Quarter/Winter) 2012): 80-7.

H Qu, Anne Rentfro, Y Lu, Saraswathy Nair, C Hanis, J McCormick, and S Fisher-Hoch. Host susceptibility to tuberculosis: insights from a longitudinal study of gene expression in diabetes.. *The international journal of tuberculosis and lung disease : the official journal of the International Union against Tuberculosis and Lung Disease*. 16, no. 3 (January (1st Quarter/Winter) 2012): 370-2.

N Ruiz, Luis Pacheco, B Farrell, Cody Cox, Boris Ermolinsky, E Garrido-Sanabria, and Saraswathy Nair. Metabolic gene expression changes in the hippocampus of obese epileptic male rats in the pilocarpine model of temporal lobe epilepsy.. *Brain research*. 1426, (December 2011): 86-95.

Melanie Molina, Hui-Qi Qu, Anne Rentfro, Saraswathy Nair, Craig Hanis, Joseph McCormick, and Susan Fisher-Hoch. Decreased expression of ATP6V1H I in type 2 diabetes: A pilot report on the diabetes risk study in Mexican Americans. *Biochemical and Biophysical Research Communications*. 412, no. 4 (September 2011): 728 - 731. www.ncbi.nlm.nih.gov/pmc/articles/PMC3176628/

Jorge Duran, Ortiz Ixiu, Gonzalez Enrique, Ruiz Nicole, Ortiz Manti, Gonzalez Arthur, Sanchez Edna, Eugenia Curet, Susan Fisher-Hoch, Anne Rentfro, Hui-Qi Qu, and Saraswathy Nair. Association study of candidate gene polymorphisms and obesity in a young Mexican-American population from South Texas.. *Archives of Medical Research*. 42, no. 6 (August 2011): 523 - 531.

www.ncbi.nlm.nih.gov/pmc/articles/PMC3230750/#!po=57.0513

Jorge Duran, Ortiz Ixiu, Gonzalez Enrique, Ruiz Nicole, Ortiz Manti, Gonzalez Arthur, Sanchez Edna, Eugenia Curet, Susan Fisher-Hoch, Anne Rentfro, Hui-Qi Qu, and Saraswathy Nair. Obesity is increasingly a health problem and a risk factor for diabetes in young Mexican-American populations. Genetic association studies in older, mostly non-Hispanic populations have reported that polymorphisms in the candidate genes HSD11B1, CRP, ADIPOQ, PPARG, ANKK1, ABCC8 and SERPINF1 are associated with obesity or diabetes. We analyzed the polymorphisms rs846910, rs1205, rs1501299, rs1801282, rs1800497, rs757110 and rs1136287 in these candidate genes, for association with obesity and metabolic traits in a young Mexican-American population from south Texas. METHODS: Genotyping of the seven common SNPs were performed by allelic discrimination assays in 448 unrelated Mexican Americans (median age = 16 years) from south Texas. χ^2 tests and regression analyses using additive models were used for genetic association analyses adjusting for covariates; p values were corrected for multiple testing by permutation analyses. RESULTS: rs1800497 (ANKK1) shows association with waist circumference ($p = 0.009$) and retains the association ($p = 0.03$) after permutation testing. Analysis of metabolic quantitative traits shows that rs846910 (HSD11B1) was associated with HOMA-IR ($p = 0.04$) and triglycerides ($p = 0.03$), and rs1205 (CRP) with HOMA-IR ($p = 0.03$) and fasting glucose levels ($p = 0.007$). However, the quantitative traits associations are not maintained after permutation analysis. None of the other SNPs in this study showed associations with obesity or metabolic traits in this young Mexican-American population. CONCLUSIONS: We report a potential association between rs1800497 (linked to changes in brain dopamine receptor levels) and central obesity in a young Mexican-American population.. *Archives of Medical Research*. 42, no. 6 (August 2011): 523 - 531. www.ncbi.nlm.nih.gov/pmc/articles/PMC3230750/#!po=57.0513

Jorge Duran, Ortiz Ixiu, Gonzalez Enrique, Ruiz Nicole, Ortiz Manti, Gonzalez Arthur, Sanchez Edna, Eugenia Curet, Susan Fisher-Hoch, Anne Rentfro, Hui-Qi Qu, and Saraswathy Nair. Obesity is increasingly a health problem and a risk factor for diabetes in young Mexican-American populations. Genetic association studies in older, mostly non-Hispanic populations have reported that polymorphisms in the candidate genes HSD11B1, CRP, ADIPOQ, PPARG, ANKK1, ABCC8 and SERPINF1 are associated with obesity or diabetes. We analyzed the polymorphisms rs846910, rs1205, rs1501299, rs1801282, rs1800497, rs757110 and rs1136287 in these candidate genes, for association with obesity and metabolic traits in a young Mexican-American population from south Texas. METHODS: Genotyping of the seven common SNPs were performed by allelic discrimination assays in 448 unrelated Mexican Americans (median age = 16 years) from south Texas. χ^2 tests and regression analyses using additive models were used for genetic association analyses adjusting for covariates; p values were corrected for multiple testing by permutation analyses. RESULTS: rs1800497 (ANKK1) shows association with waist circumference ($p = 0.009$) and retains the association ($p = 0.03$) after permutation testing. Analysis of metabolic quantitative traits shows that rs846910 (HSD11B1) was associated with HOMA-IR ($p = 0.04$) and triglycerides ($p = 0.03$), and rs1205 (CRP) with HOMA-IR ($p = 0.03$) and fasting glucose levels ($p = 0.007$). However, the quantitative traits associations are not maintained after permutation analysis. None of the other SNPs in this study showed associations with obesity or metabolic traits in this young Mexican-American population. CONCLUSIONS: We report a potential association between rs1800497 (linked to changes in brain dopamine receptor levels) and central obesity in a young Mexican-American population.. *Archives of Medical Research*. 42, no. 6 (August 2011): 523 - 531. www.ncbi.nlm.nih.gov/pmc/articles/PMC3230750/#!po=57.0513

Yong-Ho Lee, William Tharp, Anne Dixon, Laurie Spaulding, Susanne Trost, Saraswathy Nair, Paska Permana, and Richard Pratley. Dysregulation of CB1 expression in subcutaneous adipocytes of obese individuals. *Animal Cells and Systems*. 13, (2009): 371-379.

Yong-Ho Lee, Stephen Tokrak, Saraswathy Nair, Clifton Bogardus, and Paska Permana.

Identification of Novel Alternatively Spliced Transcripts of RBMS3 in Skeletal Muscle with Correlations to Insulin action in vivo. *J. Exp. Biomed. Sci.* 15, (2009): 301-307.

A Bell, C Guerra, V Phung, Saraswathy Nair, R Seetharam, and P Satir. GEF1 is a ciliary Sec7 GEF of *Tetrahymena thermophila*. *Cell motility and the cytoskeleton*. 66, no. 8 (August 2009): 483-99.

Y Lee, W Tharp, R Maple, Saraswathy Nair, P Permana, and R Pratley. Amyloid precursor protein expression is upregulated in adipocytes in obesity. *Obesity (Silver Spring, Md.)*. 16, no. 7 (July (3rd Quarter/Summer) 2008): 1493-500.

P Permana, Saraswathy Nair, and Y Lee. Application of DNA microarray to the study of human adipose tissue/cells. *Methods in molecular biology (Clifton, N.J.)*. 456, (January (1st Quarter/Winter) 2008): 141-54.

M Traurig, P Permana, Saraswathy Nair, S Kobes, C Bogardus, and L Baier. Differential expression of matrix metalloproteinase 3 (MMP3) in preadipocytes/stromal vascular cells from nonobese nondiabetic versus obese nondiabetic Pima Indians. *Diabetes*. 55, no. 11 (November 2006): 3160-5.

J Koska, B de Courten, D Wake, Saraswathy Nair, B Walker, J Bunt, P Permana, R Lindsay, and P Tataranni. 11beta-hydroxysteroid dehydrogenase type 1 in adipose tissue and prospective changes in body weight and insulin resistance. *Obesity (Silver Spring, Md.)*. 14, no. 9 (September 2006): 1515-22.

I Deary, C Hayward, P Permana, Saraswathy Nair, L Whalley, J Starr, K Chapman, B Walker, and J Seckl. Polymorphisms in the gene encoding 11B-hydroxysteroid dehydrogenase type 1 (HSD11B1) and lifetime cognitive change. *Neuroscience letters*. 393, no. 1 (January (1st Quarter/Winter) 2006): 74-7.

Saraswathy Nair, Y Lee, E Rousseau, M Cam, P Tataranni, L Baier, C Bogardus, and P Permana. Increased expression of inflammation-related genes in cultured preadipocytes/stromal vascular cells from obese compared with non-obese Pima Indians. *Diabetologia*. 48, no. 9 (September 2005): 1784-8.

Y Lee, Saraswathy Nair, E Rousseau, D Allison, G Page, P Tataranni, C Bogardus, and P Permana. Microarray profiling of isolated abdominal subcutaneous adipocytes from obese vs non-obese Pima Indians: increased expression of inflammation-related genes. *Diabetologia*. 48, no. 9 (September 2005): 1776-83.

P Franks, W Knowler, Saraswathy Nair, J Koska, Y Lee, R Lindsay, B Walker, H Looker, P Permana, P Tataranni, and R Hanson. Interaction between an 11betaHSD1 gene variant and birth era modifies the risk of hypertension in Pima Indians. *Hypertension*. 44, no. 5 (November 2004): 681-8.

Saraswathy Nair, Y Lee, R Lindsay, B Walker, P Tataranni, C Bogardus, L Baier, and P Permana. 11beta-Hydroxysteroid dehydrogenase Type 1: genetic polymorphisms are associated with Type 2 diabetes in Pima Indians independently of obesity and expression in adipocyte and muscle. *Diabetologia*. 47, no. 6 (June 2004): 1088-95.

P Permana, Saraswathy Nair, Y Lee, G Luczy-Bachman, B De Vozarova Courten, and P Tataranni. Subcutaneous abdominal preadipocyte differentiation in vitro inversely correlates with central obesity. *American journal of physiology. Endocrinology and metabolism*. 286, no. 6 (June 2004): E958-62.

Saraswathy Nair, C Guerra, and P Satir. A Sec7-related protein in *Paramecium*. *FASEB journal : official publication of the Federation of American Societies for Experimental Biology*. 13, no. 10 (July (3rd Quarter/Summer) 1999): 1249-57.

Hong Zhao, C.B. Russell, Saraswathy Nair, R.D Hinrichsen, and Birgit Satir. Introns are present in

the parafusin gene from Paramecium. . *Faseb Journal*. 9, no. 4 (1995): A675.

Saraswathy Nair, R Dey, J Sanford, and D Doyle. Molecular cloning and analysis of an eIF-4A-related rat liver nuclear protein.. *The Journal of biological chemistry*. 267, no. 18 (June 1992): 12928-35.

Other

Saraswathy Nair and Carla Martinez. Role of thyroid hormone in adipocyte physiology and metabolism. *J. Endocrinology, Diabetes and Obesity*.

AWARDS AND HONORS

Certificate of Recognition, MBRS-RISE program (November 18, 2016)

Certificate of Achievement, Office of Sustainability (August 28, 2016)

Certificate of Recognition, MBRS-RISE program (November 6, 2015)

Service Learning Honor, UTB (April 2014)

Genome scale statistical analysis workshop acceptance, Cold Spring Harbor Labs (2012)

Genomics Mentor/Mentee training award, NHGRI (2010)

Exceptional Merit faculty award, UTB (September 2009)

Rusteberg fellowship, UTB (2008)

Outstanding journal article , The Obesity Society (June 2008)

STAR fellow in Health Disparities, UNTHSC (2007)

PRESENTATIONS

Ednia Gutierrez and Saraswathy Nair. "Effects of Melatonin on 3T3L1 adipogenesis," Engaged Scholar Symposium, UTRGV, UTRGV. (April 2017)

Ednia Gutierrez, Honxing Lu, and Saraswathy Nair. "Determining the importance of the role of stress management in improving health outcomes (Poster presentation at Annual Biomedical Research Conference for Minority Students (ABRCMS)," Annual Biomedical Research Conference for Minority Students (ABRCMS), MBRS-RISE,NIH, (November 2016)

Saraswathy Nair. "How does IL6 play a role in obesity and diabetes?," Dept. of Immunology, UNTHSC, Fort Worth, Fort Worth, TX. (May 2016)

Karla Boeta and Saraswathy Nair. "Relationship between IL-6 polymorphisms and Obesity or Metabolic traits in Mexican Americans ," Annual Biomedical Research Conference for Minority Students (ABRCMS), MBRS-RISE,NIH, Seattle,WA. (November 2015)

Saraswathy Nair. "Role of tissue specific cortisol generation in obesity and diabetes," UTPA, Edinburg. (February 28, 2014)

Saraswathy Nair. " Molecular mechanisms in Obesity and Diabetes ," American Chemical Society, STC, McAllen. (October 19, 2012)

Manti Ortiz, Diana Elizondo, and Saraswathy Nair. "Effects of Anti-Diabetic Herbal Extracts on Adipogenesis and Adipokine Secretion in 3T3-L1 Cells ," The Obesity Society, MBRS-RISE,NIH, San Antonio, TX. (September 2012)

Saraswathy Nair and Nicole Ruiz. "Neuroendocrine Changes in the Hippocampus and their Effects on Systemic or Peripheral Metabolism ." The Obesity Society, San Antonio, TX. (September 2012)

TEACHING

Courses Taught

Adv Cell Bio
Adv Molecular Bio
Advanced Cellular/Molecular
Advanced Molecular Biology
Biological Concepts I
Biology Internship
Biology for Non-Sci Major II
Biology for Non-Sci Majors I
Biology for Non-Sci Majors II
Biomedical Research I- Research Principles and Ethics
Biomedical Research II - Research Methodology
Cell and Molecular Biology
Genetics
Human Genetics and Medical Genomics
Human Genetics/Med Genomics
Independent Research I
Independent Research II
Independent Research III
Independent Research IV
Intro to Biomed Lab I
Introduction to Biomedical Laboratory I
Introductory Medical Genetics
Research Problems in Biology
Thesis

Directed Student Learning

Undergraduate Supervised Research. Roman Sanchez, , Department of Health and Biomedical Sciences. (September 2016)

Undergraduate Supervised Research. Sachin George, , Department of Health and Biomedical

Sciences. (September 2016)

Undergraduate Supervised Research. Ednia Gutierrez, , Biological Sciences (UTB). (September 2015)

Undergraduate Supervised Research. Florentino Saenz, , Department of Health and Biomedical Sciences. (September 2015 - August 2017)

Undergraduate Supervised Research. Kristen Gomez, , Biological Sciences (UTB). (September 2015 - August 2017)

Undergraduate Supervised Research. Karla Boeta, , Department of Biomedical Sciences. (September 2013 - August 2016)

Undergraduate Supervised Research. Cecilia Castro, , Department of Biomedical Sciences. (September 2014 - August 2015)

Undergraduate Supervised Research. Erika Espinosa, , Department of Biomedical Sciences. (September 2013 - August 2015)

Undergraduate Supervised Research. Manti Ortiz, , Department of Biology. (September 2011 - August 2013)

SERVICE

Department Service

Committee Member, Admissions. (January 2015)

Committee Member, Curriculum. (January 2015)

Faculty Mentor, Mentoring. (January 2015)

Participant, Recruiting and Enrollment. (January 2015)

Participant, Recruitment of faculty and staff. (January 2015)

Participant, Scheduling for the BMED hybrid program. (October 2014)

Committee Chair, Graduation, success academy and induction ceremony. (September 2014)

Faculty Advisor (January 2014)

Participant, Infrastructure Management. (January 2014)

College Service

Attendee, Meeting, College convocations and student recruitment activities. (January 2015)

Committee Member, Executive council. (January 2015)

University Service

Committee Member, Chairs council. (October 2017)

Attendee, Meeting, Student Academic Success. (September 2017)

Program Coordinator, ENDOFR module. (September 2015)

Committee Member, SOM admissions. (January 2015)

Committee Member, Central Curriculum committee for SOM. (June 2014)

Other, Convocations, graduations, white coat ceremonies and student presentations. (2014)

Committee Member, Search Committee for Dean of School of Medicine. (August 2016 - February 2017)

Committee Member, Faculty Working Group. (September 2015 - August 2016)

Committee Member, LCME. (June 2014 - August 2016)

Development Activities Attended

- Poster presentation by lab student, "Annual Biomedical Research Conference for Minority Students ," NIH. (November 2016 - November 2016)

Seminar, "'How does IL6 play a role in obesity and diabetes?'" , UNTHSC, Dept. of Immunology. (May 2016 - May 2016)

Conference Attendance, "ENDO Society Annual Meeting," NIH. (April 2016 - April 2016)

- Poster presented by lab student, "ABRCMS," NIH. (November 2015 - November 2015)

Professional Memberships

The Obesity Society (TOS) (May 2017)

Endocrinology Society (ENDO) (January 2016)

American Diabetes Association (ADA) (2006 - 2014)

Public Service

- Reviewer, Journal Article , Peer reviewed journals . (September 2006)

- Other , Local High Schools . (June 2014 - August 2016)