

Nicole Phillips, PhD
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Area of Expertise

I first arrived at UNTHSC in 2007 as a Masters student in the Forensic Genetics Program, working extensively in research on expert systems and software development for the field. Upon graduating in 2009, and having found a love for research, I decided to pursue a PhD in Molecular Genetics, which was conferred in December of 2013. Throughout my experience at UNTHSC as a student and postdoctoral fellow, my research interests evolved. With my roots in forensic genetics, I began studying genetics of age-related, complex disease. In 2016, I returned to UNTHSC as a faculty member and have established a diverse research program.

Our laboratory has a several areas of interest:

- 1) studies of mitochondrial DNA and mitochondrial function, in the context of various disease states such as Alzheimer's disease, type 2 diabetes and preeclampsia (in collaboration with Dr. Stella Goulopoulou);
- 2) genetic aspects of pain and pain management, as the Director for Genomic Research for PRECISION Texas;
- 3) genetic risk for age-related disease and comorbidity patterns, via genome-wide genotyping, methylation profiling, and data mining.

Qualifications

PhD in Molecular & Medical Genetics, UNT Health Science Center

MS in Forensic Genetics, UNT Health Science Center

BS in Biology, University of Houston

Recent Publications

Circulating mitochondrial DNA: New indices of type 2 diabetes-related cognitive impairment in Mexican Americans

Silzer, T., Barber, R., Sun, J., Pathak, G., Johnson, L., O'Bryant, S. & Phillips, N., Mar 2019, In : PLoS ONE. 14, 3, e0213527.

Etiology of type 2 diabetes and Alzheimer's disease: Exploring the mitochondria

Silzer, T. K. & Phillips, N. R., 1 Nov 2018, In : Mitochondrion. 43, p. 16-24 9 p.

The Pain Registry for Epidemiological, Clinical, and interventional Studies and Innovation (PRECISION): Registry overview and protocol for a propensity score-matched study of opioid prescribing in patients with low back pain

Licciardone, J. C., Gatchel, R. J., Phillips, N. & Aryal, S., 1 Jan 2018, In : Journal of Pain Research. 11, p. 1751-1760 10 p.

Can genetic analysis of putative blood Alzheimer's disease biomarkers lead to identification of susceptibility loci?

Barber, R. C., Phillips, N. R., Tilson, J. L., Huebinger, R. M., Shewale, S. J., Koenig, J. L., Mitchel, J. S., O'Bryant, S. E., Waring, S. C., Diaz-Arrastia, R., Chasse, S. & Wilhelmsen, K. C., 1 Dec 2015, In : PLoS ONE. 10, 12, e0142360.

Internal validation of human mitochondrial DNA quantification using real-time PCR

Sprouse, M. L., Phillips, N. R., Kavlick, M. F. & Roby, R. K., Jul 2014, In : Journal of Forensic Sciences. 59, 4, p. 1049-1056 8 p.

Simultaneous quantification of mitochondrial DNA copy number and deletion ratio: A multiplex real-time PCR assay

Phillips, N. R., Sprouse, M. L. & Roby, R. K., 27 Jan 2014, In : Scientific Reports. 4, 3887.

Mitochondrial DNA deletions in Alzheimer's brains: A review

Phillips, N. R., Simpkins, J. W. & Roby, R. K., 1 Jan 2014, In : Alzheimer's and Dementia. 10, 3, p. 393-400 8 p.

Mitochondrial genome Interrogation for forensic casework and research studies

Roby, R. K., Sprouse, M., Phillips, N., Alicea-Centeno, A., Shewale, S., Shore, S. & Paul, N., 1 Jan 2014, In : Current Protocols in Human Genetics. SUPPL.81, 14.9.

Genetic analysis of 7 medieval skeletons from the Aragonese Pyrenees

Núñez, C., Sosa, C., Baeta, M., Geppert, M., Turnbough, M., Phillips, N., Casalod, Y., Bolea, M., Roby, R., Budowle, B. & Martínez-Jarreta, B., 1 Jun 2011, In : Croatian Medical Journal. 52, 3, p. 336-343 8 p.

Optimization of primer-specific filter metrics for the assessment of mitochondrial DNA sequence data

Curtis, P. C., Thomas, J. L., Phillips, N. R. & Roby, R. K., 1 Dec 2010, In : Mitochondrial DNA. 21, 6, p. 191-197 7 p.

Sponsored Projects

Circulating Cell-Free Mitochondrial DNA in a Preclinical Model of Preeclampsia with Placental Ischemia

Goulopoulou, S. & Phillips, N.
American Heart Association
1/07/19 → 30/06/22

Epigenetic Risk Factors for Early Age at Onset of Alzheimer's & MCI Among Non-Caribbean Hispanics

Barber, R., Phillips, N. & Zhou, Z.
Alzheimer's Disease Program
22/08/18 → 31/08/20

Mitochondrial Function as a Mechanism for Diabetes-Related Cognitive Decline

Phillips, N. & Phillips, N.
Intramural Research(UNTHSC)
1/09/14 → 28/02/18

Nanosensing of Oxidized Cell-free mtDNA: Biomarkers of Inflammation and Mitochondrial Dysfunction

Phillips, N., Planz, J. & Goulopoulou, S.
Intramural Research(UNTHSC)
1/06/17 → 31/05/18

Osteopathic Heritage Foundation And The Osteopathic Research Center: Partnership To Enhance The Evidence For Osteopathic Medicine

Licciardone, J. & Phillips, N.
Osteopathic Heritage Foundation
15/11/09 → 14/11/17

Safety and Effectiveness of Opioids in Patients with Low Back Pain: A Registry-Based Cohort Study to Compare Single- and Multi-Gene Approaches to Precision Medicine Prescribing vs. Usual Care

Licciardone, J., Phillips, N., Aryal, S., Mason, D. & White, A.
Intramural Research(UNTHSC)
1/01/17 → 30/06/18

Texas Center of Minority Health, Education, Research and Outreach - Admin Supplement

Vishwanatha, J., Phillips, N., Barber, R. & Zhou, Z.
NIMHD: Natl Institute on Minority Health
23/09/17 → 31/05/22

The Osteopathic Approach to Chronic Pain Management: Assessing its Biopsychosocial Processes and Relationships to Clinical Outcomes

Licciardone, J., Phillips, N. & Aryal, S.
American Osteopathic Association
1/09/17 → 31/08/19

