UAB DEPARTMENT OF NEUROLOGY
PARKINSON’S DISEASE RESEARCH
PROGRESS REPORT
2015
PHILANTHROPIC IMPACT ON RESEARCH AND PATIENT CARE

Thanks to the generous support of visionary philanthropic partners, researchers at the University of Alabama at Birmingham (UAB) and the Center for Neurodegeneration and Experimental Therapeutics (CNET) are making great progress toward disease-modifying treatments for Parkinson’s disease with the ultimate goal of finding a cure. We are now on the cusp of first-in-man clinical trials that hold the potential for neuroprotective drugs to treat Parkinson’s.

Philanthropic support is vital to advancing the most promising research and has played an important role in our success to date. This support also is leveraged to garner additional critical funding from numerous private donors, nonprofit grants, and federal grants, including the National Institutes of Health (NIH). The support of philanthropic partners strengthens our ability to provide unsurpassed care for the more than 5,000 patients served each year by the UAB Movement Disorders Clinic and enables us to draw closer to our ultimate goal of helping the patients who live with the disease and their families.

OUR LATEST RECRUITMENTS

Over the past 10 years, UAB has become a national and international leader in Parkinson’s disease research by recruiting the best and brightest physicians and scientists and by strategically investing in research efforts aimed at new treatments and cures.

Haydeh Payami, Ph.D.
John T. and Juanelle D. Strain Professor of Neurology

A world-renowned geneticist and scientist, Dr. Payami joined the UAB faculty in February 2015 from New York where she served as the Senior Research Scientist at the New York State Department of Health Wadsworth Center and Professor of Molecular Genetics at the State University of New York. Dr. Payami is focused on prevention and treatments for Parkinson’s and Alzheimer’s diseases, bringing a wealth of knowledge on the role of genetics in drug response with more than 25 years of research. She is the founding director of the NeuroGenetics Research Consortium and serves as Lead-Investigator. We are most excited about Dr. Payami’s objective of personalized medicine where treatments can be tailored to an individual’s genetic makeup for maximum benefit.

Matthew Goldberg, Ph.D.
Charles S. Ackerman Endowed Professor of Neurology

Dr. Goldberg was recruited from the University of Texas Southwestern Medical Center to UAB in fall of 2014 as an Associate Professor of Neurology, joining the Center for Neurodegeneration and Experimental Therapeutics. His research has concentrated on detecting the mechanisms of neuronal degeneration and understanding the roles in inherited forms of Parkinson’s disease. He has made important progress in these areas by analyzing cell and animal models bearing chromosomal mutations linked to hereditary Parkinson’s disease. Currently, Dr. Goldberg’s laboratory is studying PINK1 knockout and DJ-1 knockout rat models of Parkinson’s disease, supported by two NIH grants, as well as LRRK2 transgenic mice, supported by a grant from the Michael J. Fox Foundation for Parkinson’s Research.

DRUG DISCOVERY & DEVELOPMENT PATHWAY

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Talene A. Yacoubian, M.D., Ph.D.
Parkinson Association of Alabama Scholar in Neurology

Talene A. Yacoubian, M.D., Ph.D., is researching potential neuroprotective effects of drugs that act on 14-3-3 proteins that play a crucial role in inhibiting cell death pathways. Evidence shows overexpressing these proteins could ultimately slow and possibly halt the progression of Parkinson’s disease. Small molecules are being identified that can help increase overexpression of these proteins. Dr. Yacoubian is working with SRI on a pilot high-throughput screening that has already produced 11 small molecules that can enhance expression of 14-3-3. Candidate molecules identified through this screening will be tested for their ability to reduce toxicity in cellular models of Parkinson’s disease. The most promising molecules will then be examined in animal models. Dr. Yacoubian is also leading an investigation into a possible interaction between 14-3-3s and LRRK2. She hopes to discover if 14-3-3s can regulate LRRK2 function, thereby reducing the toxicity of mutant LRRK2.

Laura A. Volpicelli-Daley, Ph.D.
Assistant Professor of Neurology

The goal of Laura Volpicelli-Daley, Ph.D., is to determine how alpha-synuclein pathology found in Parkinson’s disease and dementia with Lewy Bodies impacts membrane traffic in neurons. Protein aggregates of alpha-synuclein define Parkinson’s disease and other synucleinopathies including: dementia with Lewy bodies, the Lewy body variant of Alzheimer’s disease, and other neurodegenerative disorders. She also seeks to determine how other genes implicated in Parkinson’s disease impact the formation alpha-synuclein inclusions. To accomplish these goals, Dr. Volpicelli-Daley uses a wide range of approaches such as live cell and high resolution imaging in primary cultured neurons, pharmacology, mouse and rat models and behavior.
PARTNERSHIPS MAKE OUR PROGRESS POSSIBLE

The immense courage displayed by the Parkinson’s patients I have treated over the years continues to bolster my resolve to advance UAB’s research into more effective therapies for Parkinson’s disease. Our ultimate goal remains, as always, finding a cure.

Philanthropic support has allowed our research to progress with astonishing speed, so much so that we now find ourselves within a few years of Phase I clinical trials for potentially life-altering therapies for Parkinson’s patients.

I believe we are in the midst of the “Century of the Brain,” with greater opportunities to make groundbreaking discoveries in neuroscience than ever before. We thank our community partners for enabling our researchers to take full advantage of this unique moment in history. Without them, we could not have advanced to this critical phase.

Sincerely,
Ray. L. Watts, M.D.

FOR MORE INFORMATION

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