# Full Proposal

*The onset of Parkinson's Disease (PD): The search for early-stage markers of disease in at-risk populations*

Parkinson's disease (PD) is diagnosed clinically based on the onset of motor symptoms like bradykinesia, akinesia, tremors and postural instability[1,2]. Unfortunately, these motor symptoms become apparent when the underlying pathological process is already well underway. Not surprisingly, PD is, at present, incurable and only symptomatic treatment (geared largely towards reducing the motor symptoms) is available[3,4]. Although these treatments offer some relief, their effects vary with individuals and long-term use (e.g., Levodopa) results in motor side-effects that heighten the challenge of living with PD[3]. Moreover, the degree of relief offered by Levodopa varies with duration and severity of symptoms as well as duration of drug use[5]. Other treatments like Deep Brain Stimulation are invasive, expensive and their effectiveness depends on the individual[6].

Considering these challenges, it would be beneficial to find ways of detecting PD earlier, preferably before the motor symptoms emerge[4]. This could allow physicians to attempt to treat the disease sooner, slow its onslaught, and even attempt a cure.

**Our project is designed towards exploring ways to diagnose PD sooner in people at increased risk for developing it**, such as people who have first-degree relatives (i.e., parents or siblings) with PD. Specifically, we are investigating the association between olfaction and caffeine intake, and the risk for developing PD in first-degree relatives of PD patients. Caffeine intake is one of the various environmental and lifestyle risk factors that has been found to be associated with PD.

**Participants will be required to fill-out demographic information, and caffeine-intake questionnaires, as well as perform a self-administered smell test.** This will be conducted entirely over regular mail (and through initial email correspondence). We will pay for postage, and offer a $10 honorarium to participants who participate in this study.

**Interested participants are encouraged to contact us at pdadstudy@gmail.com at any time between now and August 2017.**

***References:***

1. Berg, Daniela, et al. "Time to redefine PD? Introductory statement of the MDS Task Force on the definition of Parkinson's disease." Movement Disorders 29.4 (2014): 454-462.
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3.Calabresi, Paolo, et al. "Levodopa-induced plasticity: a double-edged sword in Parkinson's disease?." Philosophical Transactions of the Royal Society of London B: Biological Sciences 370.1672 (2015): 20140184

4. Lees, A. J., J. Hardy, and T. Revesz. "Parkinson's disease (vol 373, pg 2055, 2009)." Lancet 374.9691 (2009): 684-684.
5.Treciokas, Leo J., Robert D. Ansel, and Charles H. Markham. "One to two year treatment of Parkinson's disease with levodopa." California medicine 114.5 (1971): 7.
6.Benabid, Alim Louis, et al. "Deep brain stimulation of the subthalamic nucleus for the treatment of Parkinson's disease." The Lancet Neurology 8.1 (2009): 67-81.