Joy Milne
Research Only
Analytical, Measurements and Physical Chemistry

Overview

I am an Honorary Lecturer in Analytical Olfaction. I work within the Manchester Institute of Biotechnology and contribute to the development of diagnostic and prognostic tools to improve the lives of people with Parkinson's disease.

My observation initiated this research program that people with Parkinson's have a different odour. I first noticed this odour on my husband ten years before he was clinically diagnosed. When I realised this odour was common to those with PD, he and I knew that this could be of value in furthering the timely diagnosis of people with PD. To realise this, we also knew we needed to collaborate with Scientists.

To achieve this, we approached Tilo Kunath at Edinburgh University. With Perdita Barran at Manchester University, he designed an experiment to prove my olfactory observation was not related to any prior knowledge of Parkinson's in an individual nor to the observation of motor symptoms. Twelve individuals were recruited to wear tee-shirts overnight, six with Parkinson's and six control and the tee-shirts were placed in bags remote from patients.

I was able to diagnose all those who had PD conclusively, and each tee-shirt had been cut in half. One of the controlled subjects I scored as PD, and whilst initially considered a false positive, the individual nine months later informed us that they had been recently diagnosed with PD.

To the scientist, the proof of the principle that PD indeed had a distinctive odour provided sufficient evidence of principle to convince Parkinson's UK to award a small grant. The aim of this funding was to find the molecular causes of the PD odour. The highly fortuitous use of tee-shirts allowed me to tell the scientist the odour was strongest in the neck and back. These are regions where the abundance of sebum in the body is highest.

Our research uses Mass spectrometry to identify and quantify the presence of volatiles and other metabolites in the sebum. We have shown that 10 % of these are differentially regulated in PD patients. I work with the team at Manchester University using thermal desorption coupled with an odour port to code components of sebum that are odourless.

This approach is also being explored to determine and identify other odorous compounds, including those related to tuberculosis infection, and to diagnose tuberculosis and skin-based odour. My observation has launched the concept of using a nose to diagnose. I am a shareholder in a spinout company, Sebomix Ltd.

Employment

Research Associate

Research Only
Analytical, Measurements and Physical Chemistry
The University of Manchester
1 Jul 2025 → present

Member of the Advisory commitee for TraPCAf

Newcastle University
Newcastle upon Tyne, United Kingdom
10 Mar 2023 → present

Lead PPI for iSupport for Cognitive impairment in Parkinson's disease

Newcastle University
Newcastle upon Tyne, United Kingdom
12 Feb 2023 → present