'Fear detector' being developed

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Border control in the United States. Image: James R. Tourtellotte, via Wikimedia Commons.

(PhysOrg.com) -- British scientists are aiming to develop a device that can detect the smell of fear, and that could one day identify terrorists, drug smugglers, and other criminals.

The 18-month project to develop two sensor systems is being carried out at the City University London, and is being led by Professor Tong Sun. The project has funding from the Home Office Scientific Development Branch.

After a feasibility study is complete, two devices are expected to be designed to identify the fear pheromone in human sweat; one by laser absorption, and the other by a portable optical fiber instrument. The devices could be used to help police identify abnormal behavior at big events such as the 2012 Olympics.

The research project follows on from evidence gained last year in the US by scientists who collected the underarm sweat of 20 novice skydivers about to make their first jump. They then asked other volunteers, ignorant of the experiment's nature, to smell the samples via a nebulizer, while their brains were scanned. The study found the smell of fear is real, and that the parts of the brain associated with fear responded to the smell of fear.

The British scientists hope to use the effect to develop security systems that can detect the fear pheromone. The challenge, according to Sun, is in identifying and characterizing the specific chemical signature for human fear, especially fear related to criminal acts.

The research will also examine potential problems such as interference by deodorants and perfumes, and will look at variations in pheromone production in different people.

Professor Sun said prototypes of the "fear detectors" could be developed within a couple of years, and she added that she saw no reason why there could not be similar detectors to identify other human odors by age, gender or race, in order to build a profile of a criminal.