

Project proposal template

Graduate School studentships

March 2015

<i>Project title</i>	Development and validation of a hair-based doping test for simultaneous detection of multiple drugs: application to the WADA prohibited substance list.	
<i>First Supervisor</i>	Professor <input type="text" value="▼"/>	<input type="text" value="Declan Naughton"/>
<i>Second Supervisor</i>	<input type="text" value="Prof Andrea Petroczi"/>	
<i>School</i>	Life Sciences <input type="text" value="▼"/>	
<i>Other member of supervisory team (no more than three KU supervisors in total)</i>	<input type="text"/>	
<i>Specific requirements beyond 2:1 degree</i>	Preferably a Masters Degree	

Project summary
(max 4,000 characters)

Endeavours to maintain reduction or prevention of doping in sport require considerable expertise, finance and determination. The goal of a single test to simultaneously measure a large panel of prohibited substances over durations of months is now feasible. The aim of this proposal is to harness the latest developments into a single test for the large majority of exogenous prohibited substances. The programme will benefit from (i) advances in sample preparation and testing expertise, (ii) advances in software capability afforded by Dynamic Multiple Reaction Monitoring (Dyn-MRM), and (iii) increasingly sensitive LC-MS/MS instrumentation. By adopting this approach, the considerable benefits of hair sampling (non-invasive collection, ease of storage and transport, low cost and infection risk) are coupled to Dyn-MRM software which, through selective acquisition, will record spectra data for hundreds of compounds in one screening run. With the advent of state of the art tandem mass spectrometers, these advances present a very realistic opportunity for a step change to enforce the WADA prohibited substance list use at reasonable cost.

