A UNSW PhD position is available at the University of New South Wales, Sydney under the primary supervision of Dr Kirsty Walters in the Ovarian Biology Laboratory, School of Women’s & Children’s Health, UNSW, Sydney.

The University of New South Wales (UNSW) and the Fertility and Research Centre (FRC) will be supporting a student of exceptional research potential to undertake a Doctor of Philosophy (PhD) within the field of reproductive medicine. The aim is to support a postgraduate with an interest in reproductive medicine to develop their career by providing them training and mentorship to build their capacity to undertake competitive original research.

Research environment
UNSW Medicine is a national leader in learning, teaching and research, with close affiliations to a number of Australia’s finest hospitals, research institutes and health care organisations. The School of Women’s & Children’s Health (SWCH) comprises of the clinical disciplines of Obstetrics & Gynaecology and Paediatrics. Clinical academics in the School are located at the Royal Hospital for Women, Sydney Children’s Hospital, St George and Bankstown Hospitals, with teaching contributions made in Paediatrics at the Sutherland, Liverpool and Campbelltown Hospitals. The main administrative centre for the School is based at the Royal Hospital for Women and Sydney Children’s Hospital, Randwick.

The Oocyte and Ovarian Biology Research Group within SWCH aims to focus on the mechanisms regulating ovarian function and female reproduction. A focus on cellular and molecular biological techniques will be employed using animal models and human tissues. The group is also fully incorporated within the Royal Hospital for Women’s Division of Gynaecological Services and the Centre for Reproductive Medicine, providing seamless access to clinical services and clinical research material.

Project: Development of mechanism-based interventions for polycystic ovary syndrome
Polycystic ovary syndrome (PCOS) affects >100 million women worldwide. PCOS is characterized by reproductive, metabolic and endocrine disturbances. The high prevalence and wide range of adverse health conditions associated with PCOS has led to an urgent challenge - a need to address not only the infertility, but also to ameliorate the metabolic disorders. At present there is no cure for PCOS and current management of the condition is suboptimal. Therefore, there is a pressing need to develop effective evidence-based treatments for PCOS.

A major defining feature of PCOS is hyperandrogenism. Research using hyperandrogenic animal models has shown that they effectively replicate a wide range of reproductive, endocrine and metabolic features of PCOS found in humans. Recent evidence from our lab now supports a major role for neuroendocrine androgen actions in the origins of PCOS. We reported a significant breakthrough in PCOS by showing that blocking the effects of androgen excess solely in the brain (using tissue-specific androgen receptor (AR) silencing) protects against PCOS development in a mouse model. This insight opens up new treatment avenues targeting AR-mediated neuroendocrine mechanisms, although further research is needed to identify precise sites/mechanisms to target. The aim of this project is to determine which specific brain regions and circuits are involved in the androgen-mediated initiation of PCOS. This knowledge will provide clear androgenic target sites for the development of novel evidence-based treatments.

Supervisory team
Dr Kirsty Walters, Medicine, School of Women’s and Children’s Health
Dr Denovan Begg, Science, School of Psychology

Requirements: Applicants must have an Honours degree including a thesis (at least class 2 division 1) in a relevant discipline, or a Masters degree with a significant research component (minimum two full time semesters) in a relevant discipline. Scholarship details can be found at https://research.unsw.edu.au/graduate-research-scholarships
For more information please contact Dr Kirsty Walters at k.walters@unsw.edu.au