



# CALL FOR DOCTORAL CANDIDATES IN BIOMEDICAL SCIENCES & REPRODUCTIVE HEALTH

## DATE

4 February 2019

## PROJECT TITLE

Improving cervical cancer screening through the detection of high-risk HPV infections in hard-to-reach women

## INSTITUTION

International Centre for Reproductive Health- WHO Collaborating Centre on Sexual and Reproductive Health Research

## DEPARTMENT

Department of Public Health and Primary Care

## UNIVERSITY

Ghent University

## PERIOD OF ENGAGEMENT

Part-time in February 2019 to develop the PhD funding proposal (non-remunerated). If the proposal is successful, this would be a 4-year, full-time, funded PhD position.

## BACKGROUND TO THE PROJECT

In 2012 cervical cancer was the seventh most commonly diagnosed cancer worldwide, the fourth most prevalent in women, with close to 85% of the global burden occurring in developing countries. A comprehensive strategy based on prevention through vaccination against HPV – the causative agent of cervical cancer – and early detection through cancer screening has been shown to efficiently decrease the incidence and mortality of cervical cancer. HPV DNA testing is an effective and recommended primary screening strategy. Nevertheless, recent studies show that significant variability is observed between different tests, even between tests that target the same HPV genotypes and even when using similar sample preparation protocols. Although technical reasons (i.e. assay handling and lack of standardization between assays) can account for this variability, it is also hypothesised that current assays may not detect the genetic variability observed between different HPV variants (most of the times associated with different ethno-geographic origins of the host) or single nucleotide polymorphisms (SNP) that may spontaneously occur in HPV. Approximately 30%–50% of positive cases show discordant results among HPV infections, without a reliable justification. Therefore, there is a need to explore new ways to reduce variability in HPV DNA results, to adapt the assays to reach diverse groups of women at high risk for cervical cancer around the world and to increase specific detection of HPV infections associated with precancer or cancer development.

The ELEVATE project (2019-2023) was launched by a global consortium of nine partners from Europe and Latin America. It receives funding from Horizon 2020 to develop and translate a new strategy and technology for cervical cancer screening into a cancer control strategy tailored to hard-to-reach women in low-resource settings. Among its goals, the ELEVATE seeks will develop an efficient and marketable test for the combined genomic and proteomic detection of high-risk HPV infections in hard-to-reach women in Belgium, Brazil, Ecuador and Portugal. The novel HPV test will be compatible with self-sampling and generate rapid and easy-to-understand results, without relying on electrical outlets or trained health personnel, offering much added value for hard-to-reach women and healthcare workers in low-resource settings.

## PROJECT OBJECTIVE

This PhD project will be based in Belgium and be conducted as part of the ELEVATE project. The central objective of this PhD project is to design and validate an optimized HPV DNA assay capable of discriminating between all 14 HPV genotypes at high risk of developing cervical cancer in genetically diverse populations. The results from this PhD project will be the foundation for the portable, low-cost, and point-of-care HPV test that will be developed in ELEVATE. This project will be supervised by Prof. Olivier Degomme and Prof. Elizaveta Padalko.

## ELIGIBILITY CRITERIA

You have attained all of the following:

- A Masters degree in biomedical engineering, biomedical sciences, or other relevant field (master after bachelor, NOT master after master)
  - that was awarded from a university in the European Economic Area or Switzerland, and
  - that was awarded not earlier than 1 March 2016, and
  - that was awarded with distinction or great distinction (cum laude).
- Acquired no more than 18 months of scientific work experience by 1 March 2019 (excluding internships and thesis that were part of your graduate education)
- Have at least one peer-reviewed A1 journal publication in the field you wish to continue researching
- Never applied or not applied more than once to the FWO PhD Fellowship programme
- Not previously received an FWO PhD Fellowship (not even in part)
- Good oral and written communication in English. Fluency in Spanish and/or Portuguese is not required but is an added value.

## APPLICATION PROCESS

Please contact Dr. Heleen Vermandere ([heleen.vermandere@ugent.be](mailto:heleen.vermandere@ugent.be)) for more information about this project.

To apply to this Call for Expressions of Interest, please send your motivation letter and cv to [heleen.vermandere@ugent.be](mailto:heleen.vermandere@ugent.be), as soon as possible and at the latest by **15 February 2019**. Please clearly indicate in your letter of motivation how you meet each of the eligibility criteria. Ineligible applicants will not be considered.

Short-listed applicant(s) will be invited to meet the research team (in person or remotely). After being selected, applicants should be prepared to contribute to writing a proposal for an FWO PhD Fellowship and submit it by the 1 March, 2019 deadline. The results of the competition will be announced in October 2019.

If awarded, an FWO PhD Fellowship grants recipients a maximum 4 year scholarship to undertake the proposed PhD research at the International Centre for Reproductive Health in Ghent, Belgium. The start date is 1 November 2019. More information: <https://www.fwo.be/en/fellowships-funding/phd-fellowships/phd-fellowship-fundamental-research/>