



CALL FOR APPLICATION FOR SEVEN PhD SCHOLARSHIPS UNDER THE SIDA PROJECT AND THE SUB-PROGRAM “UNDERNUTRITION”

Background

The research training sub-programme will address the complexity of undernutrition in children and their mothers with an extensive interdisciplinary undertaking by University of Rwanda in collaboration with complementary specialists from five universities in Sweden, involving a number of scientific disciplines working in close collaboration. It is planned as four interlinked research projects combining Health issues, Agricultural practices and Environmental matters, with Geospatial Information Technology, Innovation opportunities and Gender theory and analysis as cross-cutting themes. This sub-programme will engage 7 PhD in sandwich mode with supervision from Rwanda/UR and Swedish Universities. Each PhD will be supervised by experts in at least two of the fields of science represented in this sub-programme.

The research programme will contribute to the implementation and management of Rwanda's cross-sectoral Nutrition and Food Security policy, Poverty Reduction strategy and connected initiatives. Main contributions are strategic interventions and inclusive innovations targeting families, mothers and children at risk of undernutrition and stunting, based on an analysis of needs, demands and opportunities. Substantial contributions will also be innovations for the development of an electronic Rwandan Medical Birth Register and ICT-based tools for data collection, analyses, and dissemination, as well as monitoring of interventions addressing child stunting.

Call for application

In the perspective described above, the Undernutrition project intends to enroll 7 candidates in a PhD program in sandwich mode. It is in this context that UR in its undernutrition sub-program invites interested applicants to apply for a PhD position.

1. Spatial and population based analyses to investigate socio-economic factors associated with undernutrition

Associations between malnutrition and different socioeconomic and environmental factors will be studied and analysed in time and space. Spatial methods and Geographical Information System (GIS) will be used. The project starts by using traditional geo-statistical techniques to study associations at global and local levels. Then machine learning techniques will be used for modelling associations.





Using these models one can simulate malnutrition risks under different socioeconomic and environmental conditions. Association risk maps and other outputs will be produced to support decision-making by policy-makers for mitigating and controlling malnutrition in the study area.

The selected candidate under this project will be based at the Geographical Information System (GIS) Centre at Lund University, Sweden, Associate Professor Ali Mansourian and at the College of Medicine and Health Sciences of the University of Rwanda (CMHS, UR)

The selected candidate for this PhD position needs a background in GIS, Geo-informatics, computer science or a related field with a good knowledge of geo-statistics. Being familiar with machine learning techniques such as ANN, SVM, etc. is a big advantage. The candidate also needs to know programming in C (C++, C#), Java, Python, or R.

2. Sociodemographic and psychosocial factors associated with undernutrition in children and their mothers

As stunting is a major health problem among children in Rwanda, this PhD project will investigate a variety of sociodemographic and psychosocial factors associated with undernutrition in children and their mothers, such as poverty, partner violence, parents' mental health, gender related attitudes. The main scientific area is Public Health Science and Epidemiology with biostatistical methods but also qualitative methodology will be applied. Collaboration will be close with areas such as Nutrition, Pediatrics and GIS.

The selected candidate under this project will be based at Department of Public Health and Community Medicine at University of Gothenburg, Sweden, Professor Gunilla Krantz, and at the College of Medicine and Health Sciences of the University of Rwanda (CMHS, UR).

The selected candidate should be specialized in a health related subject and a masters holder in *Public Health Science* or a related topic. Basic skills in population's health, epidemiology, biostatistics, data analysis and ICT tools are preferred.

3. The role of dietary intake and infant feeding practices for risk of stunting in childhood

The PhD project will investigate the role of dietary intake and dietary diversity of mothers and children for the risk of stunting. Barriers and facilitating factors for adequate dietary intake will be evaluated, i.e. breast-feeding and general feeding practices, accessibility to kitchen gardening, agricultural land and livestock husbandry, and maternal health literacy and capability. The main scientific areas are nutrition and epidemiology. Both quantitative and qualitative methodology will be applied. Collaboration with the areas Pediatrics, Public health, Agriculture and GIS will take place.





The selected candidate under this project will be based at the Department of Internal Medicine and Clinical Nutrition at University of Gothenburg, Sweden, Associate professor Hanna Augustin, and at the College of Medicine and Health Sciences of the University of Rwanda (CMHS, UR).

The selected candidate should be a Masters holder in *Dietetics/Nutrition or in Public Health Sciences with an extensive expertise in Dietetics/Nutrition*. Having skills in population health, biostatistics, and ICT are preferred.

4. Seasonal and spatial patterns of childhood undernutrition and identification of amendable risk factors at individual, household and community levels

The exact mechanisms behind childhood stunting remain unclear in the Rwandan setting. This PhD-project will study the relationship between nutrition specific (e.g. breastfeeding, complementary feeding, dietary supplementation of mothers and children, disease prevention, etc.) and nutrition sensitive (e.g. food security, social safety nets, women's empowerment, WASH, etc.) factors on child health and nutrition taking seasonality and spatial differences into consideration. Identification of which risk factors are amendable to intervention and at what level (individual, household, community) will be a priority. Main scientific areas are paediatric nutrition and epidemiology. The project will collaborate with expertise in Public Health, Nutrition, Agriculture and GIS.

The selected candidate under this project will be based at Department of Clinical Sciences/Pediatrics, Umeå University, Sweden, Associate professor Torbjörn Lind, and at the College of Medicine and Health Sciences of the University of Rwanda (CMHS, UR).

The selected candidate should be a specialist or late resident in paediatric medicine and masters holder in *Pediatrics or Public Health Sciences*. Basic skills in population health, biostatistics, data analysis and ICT tools are preferred.

5. Increased livestock productivity for improved human nutrition

Livestock is a unique resource with nutrient dense and high value proteins particularly important for young children and fertile women and an improved livestock production could be one way of combating undernutrition if also the products (milk, meat) are safe to eat. The main scientific area is Animal Science with a possible focus on animal nutrition/feeding. Collaboration will be close with areas such as Veterinary Medicine, Human Nutrition and GIS.





The selected candidate under this project will be based at the Department of Animal Nutrition and Management, at the Swedish University of Agricultural Sciences (SLU), Associate professor Ewa Wredle, and at the College of Agriculture and Veterinary Medicine (CAVM, UR).

The selected candidate should be a masters holder in *Livestock production/Animal science* or likewise, or in *Veterinary medicine* with focus on livestock. Laboratory skills is a merit.

6. Investigating the contribution of zoonotic infections to undernutrition

Dairy products have high nutritious value and are important in the combat against child undernutrition and stunting. A sustainable way to increase milk production is to close the efficiency gap via improved dairy cow health and reproduction management, and better nutrition. Milk quality issues must also be regarded to ensure food safety (particularly concerning zoonotic diseases), to improve processability and shelf life, and reduce rejections. The scientific area is Veterinary Medicine, in collaboration with Animal Science, Human Nutrition and GIS.

The selected candidate under this project will be based at the Department of Clinical Sciences at Swedish University of Agricultural Sciences (SLU), Associate professor Renée Båge, and at the College of Agriculture and Veterinary Medicine (CAVM, UR).

The selected candidate should be a masters holder in *Veterinary Medicine/Livestock production* is preferred. Laboratory skills is a merit.

7. Developing, implementing and evaluating a Medical Birth Register (MBR)

MBRs have proven invaluable in providing trustworthy information to health sectors, governments and researchers on outcomes of pregnancy and delivery. The project aims to develop a pilot electronic Rwandan Medical Birth Register, including monitoring the process of implementation and evaluating adverse pregnancy outcomes. Main scientific areas are Public Health Science/Obstetrics & Gynecology. Methods are epidemiology, biostatistics and qualitative methods. Close collaboration with GIS, pediatrics and nutrition.

The selected candidate under this project will be based at Department of Clinical Sciences/Obstetrics & Gynecology at Umeå University, Sweden, Professor Ingrid Mogren, and at the College of Medicine and Health Sciences of the University of Rwanda (CMHS, UR).

The selected candidate should be a Masters holder in *a health related scientific area*, and obstetric experience is a merit. Basic skills in epidemiology and biostatistics, data analysis and ICT tools are preferred.





Funding

The PhD training will be funded by the UR-Sweden Program grant.

Requirements

The applicant should be:

- a Rwandan Citizen;
- a Master's degree holder in the mentioned field/s stated under each PhD project above
- Candidates from collaborating Rwandan Government institutions such as University Teaching Hospitals, RBC, MoH, RAB, etc. are eligible and invited to apply. When successful, such candidates shall have to produce commitment letters from their respective institutions to release them to undertake the PhD on sandwich model. Furthermore, UR shall have agree with these institutions how the acquired expertise shall benefit both the institution of origin of the candidate and UR.
- Ready to adhere to UR capacity building policies and regulations;
- Having interest and passion in undernutrition (teaching, research, inter-institution collaboration for undernutrition related matters);
- Ready and able to conduct his/her PhD research activities in a collaborative way.
- All things being equal, priority will be given to UR staff.
- In line with UR's gender policy and UR's commitment to bridge gender gap in academic (teaching and research) jobs; all things being equal, female candidate shall be preferred.

Application file

Applicants must submit the following documents (well numbered):

1. Application letter addressed to the Ag. Director of Centre for Postgraduate Studies, University of Rwanda; the letter should demonstrate commitment, motivation and reasons for interest in this PhD program. A special section should be devoted to demonstrating how the applicant meets the above requirements;
2. Curriculum Vitae;
3. Copy of the degrees (Masters degree in the mentioned area under each of the seven projects)
4. Administrative recommendation letter from the direct supervisor;





5. Recommendation letters from at least two individuals of which one should be from academia;
6. Interested candidates should demonstrate in writing:
 - 1) brief reflection on the direct causes of undernutrition in children in Rwanda and also think through which are some of the most important indirect causes. Max 5-7 lines;
 - 2) their interest in one of the PhD projects described above and motivate why,
 - 3) earlier experience in the field chosen;
 - 4) academic merits such as exams in the field, any related publications, any field experience relevant to the PhD project applied for.

How to apply?

- The complete hard copy application files should be submitted to the office of the Ag. Director of the UR-CPGS at UR Head-Quarters (Gikondo) with a copy to the Dean of the School of Public Health at UR-Remera Campus.
- A soft copy of the application should be sent to the Mrs. Gloriose UMULISA GASHAYIJA, the Scholarships Officer at UR-CPGS (email: gashayijagloriose@gmail.com) with Cc. to the sub-program team-leader, Assoc. Prof. Aline UMUBYEYI (email: aline.umubyeyim@gmail.com).

Eligible applicants will be invited for an interview for the final selection of the Candidate.

Deadline for application

Not later than 15th September 2019 at 5:00 p.m.

For more information

Applicants can contact the Project PI, Assoc. Prof Aline UMUBYEYI (email: aline.umubyeyim@gmail.com)

Done at Kigali, on 13th August 2019

Dr Celestin NTIVUGURUZA

Acting Director, University of Rwanda Centre for Postgraduate Studies (UR CPGS)

