

# Afrique One-REACH

## Call for Postdoc fellowship 2023



### Research Programme in Data Science, Statistics and Modelling (DSSM)

#### Fellowships

- 1 Postdoc (2-3 years)

(For more information concerning this TP, contact the Lead & Co-leads)

TP DSSM lead	CSRS – Prof Bassirou Bonfoh (a.i.) Dr Aurélie Cailleau: Centre Suisse de Recherche Scientifique, <a href="mailto:a.cailleau@csrs.ci">a.cailleau@csrs.ci</a> (Assistant)
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Collaborating institutions	Ifakara Health Institute (IHI, Tanzania) University of Glasgow (UG, UK) Centre Suisse de Recherches Scientifiques (CSRS) Swiss Tropical and Public Health Institute (STPHI)
Nb. REACH fellows	1 postdoc
Proposed mentors	Dr Simon Babayan (UG), Dr Aurelie Cailleau (CSRS), Dr Samson Kiware (IHI), Prof Dan Haydon (UG), Dr Paul Johnson (UG), Dr Mafalda Viana (UG), Dr Richard Yapi (CSRS), Prof Jakob Zinsstag (Swiss TPH), Prof Bassirou Bonfoh (CSRS).

#### Description of TP DSSM

The goal of the Transversal Program in Data Science, Statistics and Modelling (DSSM) is to provide leadership and support for data management and analysis activities across the consortium. A fundamental premise of this TP is that modelling activities must be embedded within the individual research narratives and context of the three TTPs (see the annex below), and not as research activities within this TP. Therefore, it is expected the TP will work closely mentoring and supervising those fellows undertaking quantitative research in all the TTPs. We will support TTPs to identify the key tractable quantitative questions underpinning each of their research programs, and in formulating the research planning and design of the quantitative fellows' research activities. We recognize the challenges of large-scale data collection, data sharing and ethics in One Health contexts, and therefore the premium placed on efficient and powerful data analyses, together with the importance of data

integration protocols that enable different types of data to be combined to estimate parameters and assess research hypotheses. We anticipate that our 'One Health big data' is more likely to be acquired through the use of spatial sensors (e.g. remote sensing), demographic censuses (national census data and health and demographic surveillance system), and genomic data (e.g. whole genome sequencing and phylodynamic analysis). We will provide core support for data management and robust reproducible analysis pipelines, introductions to data visualization and programming. Combining our expertise across the consortium will be able to offer expert support for a wide range of analytical approaches that will depend on the needs of fellows but could include standard frequentist and Bayesian statistical modelling, latent variable modelling, agent-based models, machine learning and artificial intelligence methodologies, strategic and more tactical mathematical modelling, phylodynamic models, and spatial analysis. We will for the most part deliver this support in the R environment or other software, through accessible entry level courses suitable for all fellows, and much more specialist bespoke one-on-one training for our fellows with more quantitative experience. We recognize the value of 'beacon-modelling activities' where advanced data analysis and modelling manifestly adds value to projects (for example in our consortium in the design of rabies control programs and the dynamics of vector-borne diseases) and will showcase research that can inspire fellows to plan more quantitative research.

Our previous experience has revealed to us how challenging the delivery of effective training in this area is. While entry-level training can be provided at a larger scale through workshops at our training centres and through 'micro-MOOCs' that can deliver refresher short courses in fundamental concepts in mathematics and statistics, for more advanced work there is really no substitute for one-on-one or small group supervision and frictionless communication between this TP and the TTPs is essential. We also recognize the value of high mobility – spending time in our Institutions rich in analytical capacity, and for the TP staff and fellows to integrate with our TTPs.

### **Background:**

Non-Communicable Diseases (NCDs), Neglected Tropical Diseases (NTDs), and Endemic and Emerging Zoonoses (EEZs) more generally call for integrated One Health approaches, and integrated approaches call for modelling to design, explore, and evaluate intervention scenarios and estimate their effectiveness for public health policy decision.

### **Challenge:**

A lot of data has and will be generated within our consortium across the African continent, and we run the risk these are underused because of a lack of modelling and analytical capacity. Our challenge is to analyse these data in a way that delivers maximum value, insight, and strengthen staff trained sustainably in data science methodology.

### **Main Objective/ Research question:**

The main objective is the application of mathematical, quantitative methods embedded in One Health frameworks to the management of diseases. The nature of our consortium requires working in a wide variety of different contexts, however diverse and integrated approaches will always be key to the optimal solutions.

We seek a postdoctoral candidate who is willing to work with our consortium members and our three Thematic Training Programs (in EEZs, NTDs, and NCDs) to help build capacity in data science, statistics and modelling, through organizing training sessions, and undertaking collaborative research with those who would benefit from it. However, there will also be good opportunities for the successful candidate to pursue their own research interests, ideally in some area related to One Health. The career development of the Postdoc will be advanced through their involvement with a diverse range of projects, and access to data sets, where they will have the opportunity to apply their existing skills in the development of outputs in collaboration with TTP fellows, expand on their skillsets through interactions with experienced quantitative Principal Investigators across the consortium, and through their own projects on which they will lead. TTP leads will ensure the workload is arranged to achieve an appropriate balance of the provision of training, their own skill acquisition, research support and leadership.

The candidate should develop a two pages concept note outlining how they think they can contribute to our consortium activities with their research and collaborating with other projects in the consortium and their networks.

### **TP DSSM Postdoc programme**

#### **Ref: TP-DSSM-Postdoc-1**

**Project topic:** Supporting, developing and expanding research applications using data science, statistics and modelling across the Afrique One-REACH consortium.

**Project Description:** The main objective of the position is the application of quantitative methods embedded in One Health frameworks to the management of diseases.

**Qualification:** The candidate must be a citizen of an African country who holds a Ph.D. or has submitted his or her Ph.D. thesis in mathematics, quantitative science that is or can be applicable in One Health contexts. The ideal candidate should have some experience in mathematical models, epidemiological models, some experience of computer programming, and statistical data analysis. Candidates should have at least two first-author publications in peer-reviewed journals. A basic knowledge in social science methodology and/or transdisciplinary methods would be a plus.

**Enrolment:** The postdoctoral fellow may negotiate to be enrolled/based in Abidjan at CSRS (Côte d'Ivoire) or in an institution in partnership with the listed institutions.

**Training:** The research will primarily involve a comparative analysis of health issues and systems in East and West Africa. Opportunities for further training within the Afrique One-REACH consortium will be offered at the northern partners in UK and Switzerland.

**Mentorship/ Supervision:** The fellow will be co-supervised by TP co-leads and the Director of Afrique One-REACH and will be given the opportunity to bring or to select mentors from the list of Afrique One-REACH mentors. He/she will be part of PhD/ Master thesis committees.

**Fellowship duration:** The fellow will be engaged for **36-48 months** after which he/she will get independence with grant he/she should leverage.

**Budget allocation for fellowships** (budget is indicative): The budget will comprise (i) stipend, (iii) research permits, ethical clearance, (iv) travel-flight-visa-insurance and interactions with fellows, (v) basic equipment and material, (vi) miscellaneous.

Postdoctoral Research Fellowships      **50'000-53'400 Euros/ per year**

## **I. Application documents**

1. Fill in online CV-form <https://bit.ly/3KDoH1x> including a list of publications and active conference participations (i.e. poster and oral presentation)
2. Application letter describing your interest in the programme Afrique One-REACH and One Health, any prior experience relevant to the proposed topic and your longer-term ambitions and goals (max. 500 words)
3. PhD: Summary of your last qualification work (max. 500 words); one sample publication
4. Optional: Short project proposal (strictly keep to instructions under point IV. below)
5. Letter of support for the project from the academic supervisor or head of the academic institutions where you will be enrolled.

## **II. Optional: Short project proposal (to be uploaded as file in online CV form)**

Note: To win this fellowship, you will have to show how you will employ the One Health approach together with your discipline to perform the research on diseases or health threats relevant to your country or Africa.

- 1) Project title (25 words max.)
- 2) Abstract (250 words max.)
- 3) Introduction / Context (500 words max.)
- 4) Research Questions and Objectives (250 words max.)
- 5) Methodology (1000 words max.)
- 6) Expected Results (250 words max.)
- 7) Partners and Networks (250 words max.)
- 8) Timeline (table)
- 9) Budget
  
- 10) Annex: Letter of Support (signed by a supervisor) to be uploaded separately in online CV form)

Submit the application online: <https://bit.ly/3KDoH1x> by **June 29th, 2023 5 pm GMT**. Candidates that are selected for the next stage will be invited for an interview at Afrique One-REACH institutions in their respective countries or where most convenient or online.

### III. Timeline (indicative)

Activities	Date
Advert	15 <sup>th</sup> June 2023
Contact with members	15-20 <sup>th</sup> June 2023
Submission deadline	29 <sup>th</sup> June 2023, 5pm GMT / 8pm EAT
Notification to selected candidates and webinar to prepare for the interview	Week of 10 <sup>th</sup> July 2023
Interviews	19-28 July 2023
Final notification	31 July 2023
Fellowship activation and contract	From August 2023 onward
Kick-off meeting and training	Last quarter of 2023

### IV. More information

E-Mail: [afriqueone.fellowship2023@csrs.ci](mailto:afriqueone.fellowship2023@csrs.ci)

Phone: +225 07 89 40 31 52

Website: [www.afriqueoneaspire.net](http://www.afriqueoneaspire.net) / [www.csrs.ch](http://www.csrs.ch)

### V. Selection procedure

#### a) Administrative eligibility check

- Completed online CV form incl. compulsory application documents (Valid ID, sample of written work, short proposal)
- Candidates must be citizens of an African country
- Relevant PhD degree from a recognized university for Postdoc applications (or Evidence of university enrolment in PhD programs) as specified in each call (original documents may be requested and if necessary contact with the institution will be done)
- Specific requirements put into the topic description (such as years' experience, other qualifications, etc.)

#### b) Selection by the TP Panel and Supervisors

##### Qualifications and Motivation:

- Experience and ability
- Relevance of experience to the topic
- Demonstrated interest in One Health and its principles
- Written work
- English being the scientific language, proficiency in English is required but French skills are an advantage. French native speakers are eligible will be trained and called for using English in all Afrique One-REACH activities.

### c) Interview (TTP/TP panel only)

- Candidate's knowledge of the subject incl. One Health
- Motivation to carry out the work
- Demonstrated ability to work in a team.
- Availability to start the project at the provided starting date or at a reasonable time

Applications will be scored on each sub-criteria on a short scale (1–5, or Poor, Satisfactory, Good, Very Good, Excellent) and final ranking generated to identify the highest scoring candidates. Women are particularly encouraged to apply. We seek a 1:1 ratio of men and women.

## VI. FAQ

### 1. What is meant by reference number?

The code at the beginning of each topic in blue, e.g. Ref: End-EEZs-PhD-WP-1.3 ; Ref: TTP-Cut NTDs Postdoc 1. Choose one from the drop-down list in the online CV form.

### 2. Is it possible to apply in French?

We accept applications in French for MSc level with an English abstract. However, application documents in English are an advantage, as some members of the review panel do not read French. At this stage, the language will not be a major concern.

### 3. Are letters of recommendation required?

No, they are optional, but all candidates must indicate contact details of two referees. A letter of support from your supervisor for your short project proposal is an advantage.

### 4. Do candidates have to be enrolled in one of the Afrique One-REACH institutions?

For the fellowship, they must be enrolled in one of the countries' universities that are part of Afrique One-REACH (Chad, Côte d'Ivoire, DRC, Kenya, Morocco, Ghana, Senegal, Tanzania, Uganda) or CSRS and Afrique One-REACH partners (Benin, Burkina Faso, Guinea, Mali, Sierra Leone, Togo, Nigeria, The Gambia, Mauretania, ...). However, exceptions are made for fellows from other African countries provided that the process of Memorandum of Understanding with the candidate's institution will not take time.

