

Bioinformatician for Malaria Physiopathology/Malaria Genomics group.

**Description:**

The Barcelona Institute for Global Health (ISGlobal) is a cutting-edge institute addressing global public health challenges through research, translation into policy and education. ISGlobal has a broad portfolio in communicable and non-communicable diseases including environmental and climate determinants, and applies a multidisciplinary scientific approach ranging from the molecular to the population level. Research is organized in three main areas, Malaria and other Infectious Diseases, Child and Maternal Health, and Urban Health, Climate & Non-Communicable Diseases. ISGlobal is accredited with the Severo Ochoa distinction, a seal of excellence of the Spanish Science Ministry.

**What We Are Looking for:**

ISGlobal is seeking a talented individual who is experienced in bioinformatics analysis of Next Generation Sequencing (NGS) data and pipeline development. The successful candidate will be responsible for providing bioinformatics expertise in the context of the project “Targeting the *P. falciparum* genome for public health impact in Mozambique”. The overall aim is to advance the goal of malaria eradication through the identification of key drivers of malaria transmission using innovative genomic and analytical tools. The project will be conducted by the Malaria Physiology group at ISGlobal, in collaboration with the Manhica Health research Center (Mozambique), the University of California-San Francisco and the Institute of Disease Modelling (USA).

**Field research: (please, highlight the fields that define the position)**

- Biological sciences
- Computer science
- Medical sciences

**Training and experience /Qualifications:**

- Experienced Technician in Bioinformatics.

**Specific Requirements:**

**Required:**

- Graduate in bioinformatics, computer science, mathematical modeling, big data analysis or related areas. Background in molecular and cellular biology is a plus.
- Knowledge and, preferably, experience in management and analysis of genomic data.
- Demonstrated application of open-source packages for NGS data.
- Availability to travel to Mozambique & USA for training purposes.

**Desired:**

- Postgraduate degree such as Master's or Ph.D. experience.
- 3-5 years of experience in bioinformatics software use and/or development (Python, R, or other relevant programming languages).

- Good level of statistical programming.
- Demonstrated knowledge of statistical principles, including experimental design and machine learning.
- Strong data visualization skills.
- Demonstrated success in technical proficiency, scientific creativity, collaboration with others and independent thought.
- Ability to collaborate with the team and translate existing research into practical solutions and products.
- Drive project execution and implement a robust plan for measuring success.

### **Key Responsibilities:**

- Develop and use bioinformatics approaches to interrogate parasite populations from high burden to near elimination settings in Mozambique to derive epidemiologically actionable information for malaria molecular surveillance. We will target 3 use cases: a) antimalarial and diagnostic resistance; b) parasite importation and characterization of local transmission in near-elimination settings; and c) stratification, monitoring and impact evaluation. The final aim is to integrate main genetic data data into surveillance activities in Mozambique through periodic interactions with the National Malaria Control Program and other stakeholders in the country working on the surveillance space.
- Provide bioinformatics support to the team in other research projects.

### **Specific Duties:**

- Analysis of malaria parasites genomes samples from Mozambique to get insights into best approaches for the control and elimination of the disease.
- Develop and optimize scripts, analysis pipelines and reports for routine NGS and genomic data processing.
- Use machine learning and AI to select key genetic markers of interest for targeted surveillance.
- Extend the analytics and visualization of capabilities of in-house developed dashboards.
- Publication curation and entry into databases.
- Interact with the research team in Mozambique & USA for training and harmonization purposes.
- Additional duties as assigned.

### **Skills**

- Strong problem-solving competence and effective communication skills.
- Drive and determination.
- Desire to learn.
- Focus and discipline.
- Respects and embraces diversity of perspective.
- Enjoy solving problems; inquisitive and analytical; engaged and motivated.
- Able to work both independently and as part of a larger team.
- Ability to see the big picture and work towards that goal.
- Ability to build and manage relationships with various collaborators across and outside the company.

### **Language level:**

- Fluent English

**Conditions:**

Duration: 1 year (extendable depending on the performance)

Starting date: **January 2021**

Contract: Full time

*During the crisis caused by COVID19, standard working conditions will be adapted to sanitary requirements.*

**How to apply:**

Applicants must fill in the request form and include the following code reference position: **BioinformAnalysis\_NGS\_Nov20** attach the CV and a Cover Letter. Each attached document must be named with the candidate name and surname.

The receipt of applications will be open until 15<sup>th</sup> January 2021

**Applications will be accepted until 17.00 CET of the closing date.**

**Only the applications submitted through the request form will be considered.**

**Only shortlisted candidates will be contacted.**

**The interviews could be placed during the reception candidatures period.**

*In ISGlobal we are committed to maintaining and developing a work environment in which the values and principles of our organization are respected and equal opportunities between women and men be promoted in each of the areas in which we operate, not tolerating discrimination based on criteria such as age, sex, marital status, race, ethnicity, disabilities, political leanings, religion or sexual orientation.*