SCIENTIFIC (COMPUTER) PROGRAMMER

(Payclass 10; part-time, 3-month Paid on Claim contract)

Modelling and Simulation Hub, Africa (MASHA)
Department of Statistical Sciences
Faculty of Science

The Modelling and Simulation Hub, Africa (MASHA) in the Department of Statistical Sciences invites applications for part-time consultancies (vendor) over a 3-month period starting 24 January 2022 or as soon as possible.

MASHA's research focus is the development and application of mathematical modelling and computer simulation to predict the dynamics and control of infectious diseases to evaluate the impact of policies aimed at reducing morbidity and mortality. Based in the Faculty of Science, MASHA's research is closely integrated with other disciplines resulting in policy-driven and impactful scientific research.

We are looking for motivated individuals to support the development of mathematical disease modelling applications to inform disease control strategy. Specific projects include the development of RShiny applications/interactive dashboards for Syphilis, Hepatitis A and Pertussis disease.

Example RShiny app: www.SACMCEpidemicExplorer.co.za

The successful candidates would be required to lead and/or support application development including the initial design, model optimisation, and user interface design.

Minimum Requirements:

- An Honours degree or equivalent experience in computer programming, data science, statistics or related subjects
- Experience in app and/or web design
- Experience working with R and/or RShiny
- Familiarity with version control (eg git)
- Ability to work in a fast pace, interdisciplinary environment
- Well-developed and professional interpersonal and communication skills
- Effective time-management skills and the ability to organize, prioritize and multitask
- Ability to work independently and as part of a team

Advantageous:

- Programming proficiency in languages such as C++, Python, Julia
- Experience in developing RShiny applications
- Experience in public health and/or disease modelling

Responsibilities:

- To work with the Director of MASHA, Prof Sheetal Silal and the team of modellers and clinicians to transform existing transmission models into interactive RShiny applications for Syphilis, Hepatitis A and Pertussis disease.
- Key activities include:
    - Ongoing consultation with modelling and user team through weekly meetings
    - Development of wireframes
    - Live-running model implementation and optimisation
    - Interface design
    - Data wrangling
    - Model visualisation development
    - Application piloting
    - User manual development
    - Incorporating feedback from modelling and user team

Key deliverables/milestones:

- Wireframes - 10 days from project start
- Presentation of wireframes to modelling and user team - 10 days from project start
- Application containing live-running model implementation - 4 weeks from project start
- Application with developed user interface - 6 weeks from project start
- Presentation to modelling and user team - 6 weeks from project start
- Delivery of application incorporating feedback from above meeting - 8 weeks from project start
- Development of user manuals and final application delivery - 10 weeks from project start

Working environment

MASHA is situated on the main campus at the University of Cape Town, Rondebosch, Cape Town. While remote working is acceptable, it is preferable that successful candidates attend meetings with the modelling team in person at the MASHA office.

As the complexity of the required applications differs by disease, remuneration for individual applications will range from R50,000 - R75,000 each. Payment will be made at an hourly rate on delivery of milestones.

To apply, please e-mail the documents below in a single pdf file to Ms Fadzai Munyanyi at fadzai.munyanyi@uct.ac.za

- Cover letter, and
- Curriculum Vitae (CV)
- Names and contact details of two referees

Please ensure the title and reference number are indicated in the subject line.

An application which does not comply with the above requirements will be regarded as incomplete.
Only shortlisted candidates will be contacted and may be required to undergo a competency test.
Queries may be directed to Ms Fadzai Munyanyi at fadzai.munyanyi@uct.ac.za.

Telephone:	021 650 7925	**Website:**	www.hr.uct.ac.za
Reference number:	E22105	**Closing date:**	21 January 2022

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UCT reserves the right not to appoint.