Postdoctoral Fellow – Geospatial Agent-Based Mathematical and Computational Modelling of Infectious Diseases

A Postdoctoral Research Fellow position is available immediately in the inter-disciplinary Global Disease Modelling and Policy Group led by Prof. Edwin Michael at the Center for Global Health Infectious Disease Research, University of South Florida, to develop new mathematical and computational frameworks for geospatial multi-group agent-based modeling of the heterogeneous transmission dynamics and management of globally emergent and re-emergent infectious diseases.

The successful candidate for the position must be proficient in agent-based mathematical model construction and simulation using both analytical and numerical methods, as well as have strong programming and computer science skills.

Knowledge and experience in agent-based infectious disease modelling, high performance computing, and data science will be important, as the objective of our work is the design and implementation of sophisticated digital-twin enabled data-driven agent-based models of infectious disease emergence, spread and management across realistic population settings and landscapes. An understanding of principles and engineering of digital twin concepts, in this context, will be important.

The candidate will have an opportunity to work with our computer science partner, Microsoft Research, in developing process-driven computational applications based on machine learning algorithms/city/county digital twin construction to implement the planned agent-based models. The successful candidate will also be expected to work with group members as well as our partners from Engineering, Mathematics, and Physics. Our policy-related partners include the Department of Health, Hillsborough, and the CDC.

We are looking for creative, self-motivated individuals with ability and aptitude to pursue challenging, computationally and mathematically complex problems in a fast paced research environment.

A suitable candidate should have:

- Completed a Ph.D. in biomathematics, disease ecology, dynamical systems modelling, physics, or applied computational engineering is essential.

- Strong programming skills in Python is essential, and experience with programming in Matlab, C, R is an advantage.

- Experience with model verification & validation is essential.

- Experience in geo-spatial data science, parallel/distributed/high performance computing and scientific visualization is essential.

- Experience in agent-based modelling and understanding of digital twin construction is an advantage.

- Research experience in mathematical modelling of infectious disease transmission is an advantage.

- Strong writing and presentational skills, ability to work under supervision, collaboratively, as well as independently are essential.

- Ability to work to set deadlines is essential.

Location: Tampa, Florida, USA

Tenure: The position is available immediately for 1 year in the first instance, with the possibility of extension for another year.

Salary: Based on NIH guidelines for postdoctoral fellow salaries.

Closing Date: Position will remain open until filled. Review of complete applications will begin

Oct 25, 2021.

Equal Employment Opportunity:
 USF is an Equal Opportunity, Affirmative Action, and Equal Access institution. Applicants who need disability accommodations in order to participate in the selection process should notify Sheri Shakes at (813) 974-6494 or TDD (813) 974-1758 at least five working days in advance of need.

To apply: Candidates must complete an online application for Job Opening ID 28585 (visit https://www.usf.edu/work-at-usf/careers/index.aspx and search for Job ID 28585)**,** and upload the documents listed below to be considered for this position. Documents to be uploaded with the application include a letter of application addressing the advertised minimum and preferred qualifications for the position to which applying, a CV and a list of three references. Review of application will not begin until all required documents are uploaded into Careers. References will not be contacted without notifying applicants in advance. According to Florida law, search records, including applications and search committee meetings, are open to the public.

Email enquiry:
For any informal enquiries about this post, please contact Prof. Edwin Michael. His email is emichael443@usf.edu