The Institute for Health Metrics and Evaluation (IHME) is an independent research center at the University of Washington. Its mission is to monitor global health conditions and health systems, as well as to evaluate interventions, initiatives, and reforms. IHME carries out a range of projects within different research areas including: the Global Burden of Diseases, Injuries, and Risk Factors; Future Health Scenarios; Costs and Cost Effectiveness; Local Burden of Disease (LBD); Resource Tracking; and Impact Evaluations. The aim is to provide policymakers, donors, and researchers with the highest-quality quantitative evidence base to make decisions that achieve better health.

IHME has an excellent opportunity for a statistics and coding oriented Research Scientist to join the Local Burden of Disease team. The LBD project aims to produce estimates of health outcomes and related measures that cover entire continents, but to do so at a very fine, local resolution. Such estimates will allow decision-makers to target resources and health interventions precisely, so that health policy decisions can be tailored for local areas rather than entire countries. A few of the conditions this work will touch on are pneumonia and its etiologies, diarrhea and its pathogens, malaria, child growth failure, HIV/AIDS, tuberculosis, Ebola, and neglected tropical diseases. Through the development and use of geospatial techniques to synthesize information at the local level, and in partnership with key collaborators around the world, the LBD will produce and present results in interactive, high-resolution maps to illuminate levels, trends, and disparities in health outcomes.

As a Research Scientist on the LBD Core Code team, you will be a lead contributing to the entire Local Burden of Disease effort by driving forward novel methodological and statistical research that will be used across the various geospatial mapping efforts. This position will use model-based geostatistics (MBG), among other innovative analytical methods, and devise ways to carry them out more easily and routinely. By enhancing existing computational pipelines and writing novel computational solutions, this position helps resolve challenges to enable the timely and efficient production of high-caliber scientific and policy-relevant results. This Research Scientist must develop a command of the methods developed and the rationale for them. This individual will be a key contributor to discussions about 1) statistical and computation methods development, 2) strategic decision-making for implementation of methods into existing computational infrastructure, and 3) ongoing improvements to the architecture of our code base. In addition, this individual will be expected to collaborate with other team members on papers, presentations, and other materials to help disseminate results. As such, you will be a resource for other researchers on the team and will help with training and mentoring junior staff.

You will be integrally involved in improving our MBG methods and the architecture of our code base and are therefore someone that is capable of meeting deadlines and communicating research objectives clearly. You have experience with the publication process, and at IHME you will build out your portfolio with several peer-reviewed papers. You thrive in a collaborative work environment and are capable of working on multiple projects concurrently while meeting deadlines. You keep current of recent scientific, engineering and technical advances and are able to translate these into your research. This position is contingent on project funding availability.

**Responsibilities**

- Exhibit command of correlated data modeling (e.g. spatial, temporal, or random effects models), including the methodology and its components. If lacking direct experience with model based geostatistics, rapidly acquire methodological and applied spatial modeling knowledge.
• Undertake innovative applied statistical and computational research and application of model-based geostatistics, addressing issues such as sample bias, spatial dependence, and model validation, to better map health and health-related indicators of substantial global health importance.
• Implement, document, and test relevant computer code (mainly R, with the possibility of Python, C++, SQL or equivalent) to make the new methods and model features available to the wider team.
• Maintain, improve, and distribute completed software as part of continuous integration of the LBD software pipeline supporting the geospatial analyses portfolio.
• Independently carry out quantitative analyses and participate in reciprocal research projects. Interpret and vet results from junior staff, formulate conclusions and inform team leaders.
• Develop, quality check, and distribute complex data sets to be used in epidemiological and statistical analyses.
• Coordinate with other teams to integrate methods and results of separate research streams.
• Lead discussion in research meetings about results and analyses in order to vet, improve, and finalize results.
• Document code and analytic approaches clearly and systematically for users and other developers.
• Contribute and develop ideas for new research projects.
• Communicate with external collaborators in order to best understand the nature, key characteristics, and context of the data, engage in critiques of the analytic results, and disseminate findings.
• Contribute to research design.
• Draft presentations, manuscripts, and contribute to funding proposals. Lead and co-author scientific articles in peer-reviewed journals.
• Maintain scientific awareness and intellectual agility with data, methods, and analytic techniques.
• Oversee staff to include: hiring and training; leading workflow; priority setting; critiquing work and establishing quality standards; conducting regular performance assessments, providing mentorship and professional development for employees.
• Provide ideas and content for the development of internal trainings. Teach established trainings.
• Other duties as assigned that fall within reasonable scope of research team.

Requirements

Minimum
• Master’s degree in statistics, biostatistics, mathematics, computer science, epidemiology, public health, economics, ecology, evolutionary biology, quantitative social sciences or related discipline plus four years related experience or equivalent combination of education and experience.
• Demonstrated success in designing, executing, and troubleshooting code in using at least one of the following programming languages: R, Python, C, C++. R strongly preferred.
• Excellent analytic, critical thinking, and quantitative skills.
• Results and detail-oriented individual that can plan, initiate, and complete tasks and research projects under tight deadlines and changing priorities both independently and in a team environment.
• Experience devising and executing statistical modeling techniques.
• Demonstrated ability to quickly recognize problems in results and identify root causes in data, methods, and code.
• Excellent written and oral communication skills required, including track record of success in co-authorship on multiple scientific papers, presenting results, and representing research at meetings.
• Ability to work both independently and in collaboration with a team
• Demonstrated interest in the research described.
• A long-term interest in a research scientist position contributing to the overall mission of our research

Desired
• PhD or MD in statistics, biostatistics, mathematics, computer science, epidemiology, public health, economics, ecology, evolutionary biology, quantitative social sciences or related field plus two years’ experience preferred.
• Practical experience in one or more of the following: statistical inference, stochastic processes, space-time mathematical models, or infectious disease modeling.
• Experience contributing to a collaborative software project and working with a version control system (git, svn, etc).
• Experience with Linux and cluster computing environments.
• Experience with machine learning, data mining, and analytic techniques.
• Experience mentoring and developing junior employees on soft and technical skills.
• Experience with survey data and administrative data (e.g., HMIS, DHIS2) from health facilities.
• Experience with spatial data objects (e.g. shapefiles, rasters)
• Expertise in additional programming languages or mathematical software packages.
• Experience with project management methods.
• Peer-reviewed publication record.

Condition of employment:
• Appointment to this position is contingent upon obtaining satisfactory results from a criminal background check.
• Weekend and evening work sometimes required.

Further Information: See IHME’s website: www.healthdata.org

University of Washington is an affirmative action and equal opportunity employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, gender expression, national origin, age, protected veteran or disabled status, or genetic information.