The Institute for Health Metrics and Evaluation (IHME) is an independent research center at the University of Washington focused on expanding the quantitative evidence base for health. A core research area for IHME is the Global Burden of Diseases, Injuries, and Risk Factors (GBD) enterprise. A systematic, scientific effort to quantify the comparative magnitude of health loss due to diseases, injuries, and risk factors by age, sex, and geography over time, GBD is the largest and most comprehensive effort to date to measure epidemiological levels and trends worldwide. The forecasting project forecasts GBD inputs and results (burden of more than 300 diseases and injuries and more than 80 risk factors for all GBD geographic locations) to provide policymakers, donors, and researchers with the highest-quality future estimates to make decisions that improve health.

IHME has an outstanding opportunity for a Statistical Modeler on the Future Health Scenarios team. The Future Health Scenarios team uses data from the GBD enterprise to generate long-term population health forecasts and alternative scenarios for several hundreds of locations worldwide. The forecasting model incorporates known relationships between sociodemographic indicators, risk factors, and causes of death to generate estimates for life expectancy, mortality, and disability that are age- and sex-specific.

The Statistical Modeler will utilize advanced quantitative modeling techniques to generate a variety of location-specific, cause-specific, and bespoke health scenarios. The Statistical Modeler will work closely with team faculty, researchers, data specialists, project officers and analysts to build alternative health scenario models, and produce, vet, and disseminate results.

Overall, the Statistical Modeler will be a critical member of an agile, dynamic team. This position is contingent on project funding availability.

**Responsibilities include:**

**Research command and analyses**

- Carry out quantitative analyses and participate in collaborative research projects.
- Undertake innovative applied research and application of Bayesian statistical techniques to novel analytic challenges. In this case, the focus is on forecasting and generating alternative scenarios by writing and executing code to model the impact of different variable factors on a range of health indicators over time. The primary subject of such forecasts and scenarios are forecasts of fatal and nonfatal health outcomes as part of the Global Burden of Diseases, Injuries, and Risk Factors enterprise. Variable drivers could include risk factors, interventions, and socioeconomic and health system factors.
- Develop new code, modify existing code, and implement computational and statistical methods. Create, test, and use relevant computer code (Python, R, Java, C, or C++). Maintain and distribute completed software.
- Develop new methods to define the etiology of diseases, including diarrhea, lower respiratory illness, and severe fevers, and predict what portion of these diseases is attributable to underlying sub-causes.
• Review and assess data sources in order to determine their relevance and utility for ongoing analyses. Become an expert in understanding key data sources and, in particular, variations in these across and within countries. Data might include results on deaths, causes of death, nonfatal health outcomes, risk factors, population, education, a range of interventions, and related variables.

• Assess the quality of various data sources available and develop methods to correct limitations or biases where needed.

• 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.

• Develop and maintain relationships with designated collaborators. Respond to and, as appropriate, integrate feedback from collaborators into the analyses. Work directly with collaborators to facilitate their understanding of data to which they have access, and in turn help them understand the methods being applied. Help to manage and orchestrate joint strategies for analysis.

• Assess and coordinate with others on the integration of analytic methods into computational machinery. Work with evolving databases so that the results can be: 1) produced as part of an overall system supporting the forecasting analyses portfolio, and 2) used in conjunction with results from other research streams at IHME.

• Be an effective communicator with other project staff of varying levels, disciplines, and authority to achieve team goals for the analyses and related outputs.

• Contribute and develop ideas for new research projects.

**Publication and dissemination**

• Contribute as needed to the publication of research methods and results in peer-reviewed journals, including generating results, contributing to writing, and preparing responses to critiques.

• Present papers at national and international conferences to disseminate research findings.

• Represent the research group and the Institute at external meetings and seminars.

**General**

• Lead discussion in research meetings about results and analyses in order to vet, improve, and finalize results.

• Document code and analytic approaches systematically so that analyses can be replicated by other team members.

• Support project leaders in the development new funding proposals.

• Become a fully contributing member to the IHME team overall, lending help and support where needed, participating in mutual intellectual critique and development with colleagues, and leading trainings where relevant.

**Minimum requirements:**

Masters in computer science, statistics, mathematics, or other relevant subject, plus three years related experience or equivalent combination of education and experience.

• Demonstrated interest in the research described.

• Varied practical experience in statistical modeling.

• Experience in and demonstrated success in scientific computing using at least one of the following programming languages to manipulate data, apply statistical models, and create visualizations of data and results: R, Python, Java, C, C++.
Experience in using Git, Subversion, or other version control software.
Excellent analytical and quantitative skills.
Good publication record.
Ability to independently plan and execute research projects.
Excellent communication skills, including the ability to write for publication, present research proposals and results, and represent the research group at meetings.
Ability to thrive in a fast-paced, team-oriented research environment with a focus on producing innovative, policy-relevant results.

Desired requirements:
- PhD in computer science, statistics, mathematics or related field.
- A theoretical and practical understanding of health statistics, forecasting methods, and population health measurement.
- Expertise in a second computer programming language or mathematical platform.

Conditions of Employment:
Night and weekend work may be required. Travel to conferences and research meetings occasionally required.

Further Information: See IHME’s website: [www.healthdata.org](http://www.healthdata.org)

To Apply: Please apply through the [UW Hires Website](http://uw hires.washington.edu): and enter Req 155647.