

POSITION DESCRIPTION
For the Period of September 1, 2018 – August 31, 2019

NAME:

RANK: Research Assistant Professor

DEPARTMENT: Population Science and Policy

TITLE: Biostatistician/Bioinformatician/Clinical Epidemiologist

The Department of Population Science and Policy (PSP) at Southern Illinois University School of Medicine (SIU SOM) is broadly defined as a research and policy academic department dedicated to improving the health outcomes of the residents of central and southern Illinois. The Department seeks to understand the region SIU SOM serves, designs and studies optimal approaches to the prevention and treatment of disease, models and disseminates these interventions, and educates future health care providers on the importance of population health to the patients they serve.

The Department focuses on four major themes: 1) data acquisition and analysis to identify disease risk, 2) clinical and community focused population health strategies that reduce health disparities, 3) systems based policy formation that provides sustainable solutions, and 4) the population health education of current and future health care professionals.

The Department uses its research, scholarship, and innovation to design, implement, study, and model solutions to our region's health challenges. Our research guides policy, and our distinguished faculty advise hospital and clinical systems, government, educators, and industry on the best means to improve population health. The Department connects faculty from SIU School of Medicine to affiliated institutions, agencies, and philanthropy who are interested in population sciences research and policy formation. The Department seeks and promotes collaborations with various sectors of society to bridge knowledge gaps, share methodological expertise, and stimulate translational science.

The Department's ultimate goal is providing opportunities for healthier, happier, and more successful lives for the residents of central and southern Illinois.

POSITION FUNCTION:

This Department of Population Science and Policy based position will provide expertise in database creation and maintenance, computer and statistical programming, study design and advanced statistical methodologies for population science based research and programs at SIU School of Medicine. Biostatistical/Bioinformatic support is needed with a focus on quantitative, epidemiologic and outcomes research. To be able to conduct innovative research requires expertise ranging from traditional clinical outcomes based data analysis to analysis methods for behavioral and epidemiologic population-based research studies to big data analysis.

Major areas of focus will be: 1) accessing and analyzing ambulatory, in-patient clinical, and population level data, 2) overseeing and maintaining private and public disease registries that will integrate commonly collected clinical data with specialized population level data sets, 3) working with basic, clinical and translational scientists on the development of investigator-initiated protocols, and 4) obtaining, accessing and analyzing big data sets from outside sources.

The candidate will also be expected to develop and pursue a portfolio of externally funded research complementary to high priority areas of PSP including cancer, children's health, sexually transmitted diseases and other projects of interest. The position requires expertise in behavioral and population-based research studies with the goal of changing health outcomes in central and southern Illinois through big data analysis. Big data being defined as datasets so large and complex that they don't conform to traditional methods of analysis and storage.

ORGANIZATIONAL RELATIONSHIP:

The Research Assistant Professor will report directly to the Chief, Epidemiology and Biostatistics of the Department of Population Science and Policy, who reports to the Chair of the Department of Population Science and Policy.

CHARACTERISTIC DUTIES AND RESPONSIBILITIES:

I. Administration

10%

- Assists the Chief, Epidemiology and Biostatistics and Chair of the Department of Population Science and Policy with research program development and administration, research strategic planning and implementation.
- Participates in staff and specific research project team meetings as appropriate.
- Supervises related positions including statistical research specialist, statistician, data entry, etc.

II. Research/Scholarly Activity

75%

- Obtains and analyzes relevant big data and generates research reports to include description and analysis of incidence and prevalence data for diseases of all types. Evaluates behavioral, environmental, socioeconomic, geographic, and genetic risk factors for disease prevention and treatment.
- Provides specialized expertise in the data management, data manipulation and analysis of large and complex registries and other population-based databases to facilitate its utility in the conduct of research.
- Contributes unique scientific and research expertise to other faculty research as appropriate.
- Submits and obtains research grants and publishes findings in collaboration with faculty.
- Actively participates as a collaborating team member for PSP grants.
- Provides biostatistical and bioinformatics support for study design, implementation, and analyses of population science based investigations, studies, or screening programs.
- Develops protocols and proposals for study methodology and data analyses. Additionally, writes the interpretation of data findings in the context of ongoing research objectives.

- Performs and helps interpret statistical analyses using SAS, SPSS or R including logistic regression, general linear models with repeated measures, survival analyses, and other statistical techniques for longitudinal and missing data.
- Manages numerous research projects simultaneously. Collaborates with other members of PSP and SOM to conduct scientific research projects.
- Merges numerous, large data files to compile comprehensive datasets for studies according to study methodology.
- Provides knowledge and insight for new study ideas and long-term goals and objectives relevant to PSP initiatives.
- Reviews and remains current with technical and scientific literature in epidemiology and study outcomes of interest.
- Validates the relevance of data and information sources within and outside the public health system.

III. Teaching

10%

- Mentors and instructs other personnel (i.e., faculty researchers, technicians, residents, medical students, nurses, data entry personnel, statisticians, etc.) in public and population health and/or research methods as needed.
- Periodically delivers faculty, resident and medical student conferences on research methods and scholarship.
- Identifies material, faculty, and facilities and teach statistical and measurement, bioinformatics topics to students or staff as appropriate.

IV. Service

5%

- Membership on departmental, medical school, and university committees

Demonstrates, by actions, commitment to the mission and the behavioral standards of SIU School of Medicine. Provides excellent service to both internal and external customers through collaboration and partnership; compassion and respect; integrity and accountability; diversity and inclusion; as well as continuous learning and improvement.

MINIMUM QUALIFICATIONS

- Ph.D. with at least 2 years post-doctoral training appropriate to their area of specialization or M.D. combined with a master's in biostatistics, epidemiology, psychology, bioinformatics, computer science or health services research.
- Sensitive to the needs of underrepresented minority populations.

DESIRED QUALIFICATIONS

- Demonstrable experience in state of the art approaches to data acquisition and analysis of longitudinal clinical datasets as well as large public use epidemiological datasets such as NHANES.
- Experience working on NIH funded grants such as R21, R03 or R01.
- Record of methodological and statistical contributions to peer-reviewed articles.
- Demonstrated competence with SAS and at least one other statistical software (e.g., STATA, R, SPSS).

- Proficient in multiple methods of data imputation, cumulative and Cox hazards modeling, survival analysis structural equation modeling, linear mixed models, generalized estimating equations, the development and validation of prediction models, and non-parametric methodologies.
- Proficient in machine learning, Bayesian statistics, relational database (such as SQL), predictive modeling and at least one computer language (Python, PHP)
- Experience with state of the art methods for analyzing big data is highly desirable.
- Above average to excellent verbal and written communication skills.
- A proven track record of working effectively on teams inclusive of diverse individuals with varying research experience and backgrounds.

AUTHORITY AND RESPONSIBILITY

This position does not have authority for personnel hiring, termination or salary determinations, disciplinary actions; and has no inherent budget authority. The individual will need to seek fiscal officer approval as needed for purchases, travel, etc. This individual will work independently with a high degree of skill to perform position.

WORKING CONDITIONS/PHYSICAL DEMANDS

See attached Physical and Environmental Requirements form.

ENVIRONMENTAL, HEALTH AND SAFETY RESPONSIBILITIES

Participate in meetings, training and other environmental, health and safety activities as required by SIU School of Medicine.

Date

Research Assistant Professor

Date

Wiley Jenkins, PhD, MPH, FACE
 Chief, Epidemiology and Biostatistics
 Department of Population Science and Policy
 Associate Professor of Family Medicine

Date

Sameer Vohra, MD, JD, MA, FAAP
 Chair, Department of Population Science and Policy
 Assistant Professor of Pediatrics, Medical Humanities, and Law

PHYSICAL AND ENVIRONMENTAL REQUIREMENTS

SIU SCHOOL OF MEDICINE

Incumbent: _____ Classification: _____

Position No. (If applicable): _____ Department: **Population Science and Policy-SMS**

WORK ENVIRONMENT: (Check all applicable environments)

<input checked="" type="checkbox"/> Office	<input type="checkbox"/> Hospital
<input type="checkbox"/> Clinic	<input type="checkbox"/> Warehouse
<input type="checkbox"/> Research Laboratory	<input type="checkbox"/> Outdoors
<input type="checkbox"/> Other (Be Specific):	

PHYSICAL DEMANDS:	Seldom	Occasionally	Frequently	Constantly	N/A
(Indicate frequency of activity during performance of position duties)	(Performed rarely less than 2% of the time)	(Performed less than 25% of the time)	(Performed 26% to 50% of the time)	(Performed 51% or most of the time)	

(Click on the Physical Demands Definitions button at the bottom of the form for a list of physical demands definitions)

Reading	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Writing	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Speaking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Close visual acuity	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Travel	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hearing - Conversation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Hearing - Other Sounds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Stooping	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Squatting	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gross hand manipulation	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fine hand manipulation	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working in dust, fumes, gases, or irritants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Working at heights	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Working in extreme cold, heat and/or humidity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Working in close quarters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Climbing	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Operating motor vehicles	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sitting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Standing	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Walking	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working above shoulder level	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twisting	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kneeling	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pushing or pulling	10 - 20 lbs.				<input type="radio"/>
Carrying	10 - 20 lbs.				<input type="radio"/>
Lifting	10 - 20 lbs.				<input type="radio"/>
Other (Please list):	<input type="radio"/>				

I affirm the environmental and physical demands listed on this form are an accurate reflection of the requirements of this position to the best of my knowledge and belief.

I have read, understand and am capable of meeting the physical and environmental demands of this position.

Wiley Jenkins, PhD

Supervisor Signature

Date

Supervisor Name

Employee Signature

Date

HR-0195S
01/10

Clear

Print

Physical Demands Definitions