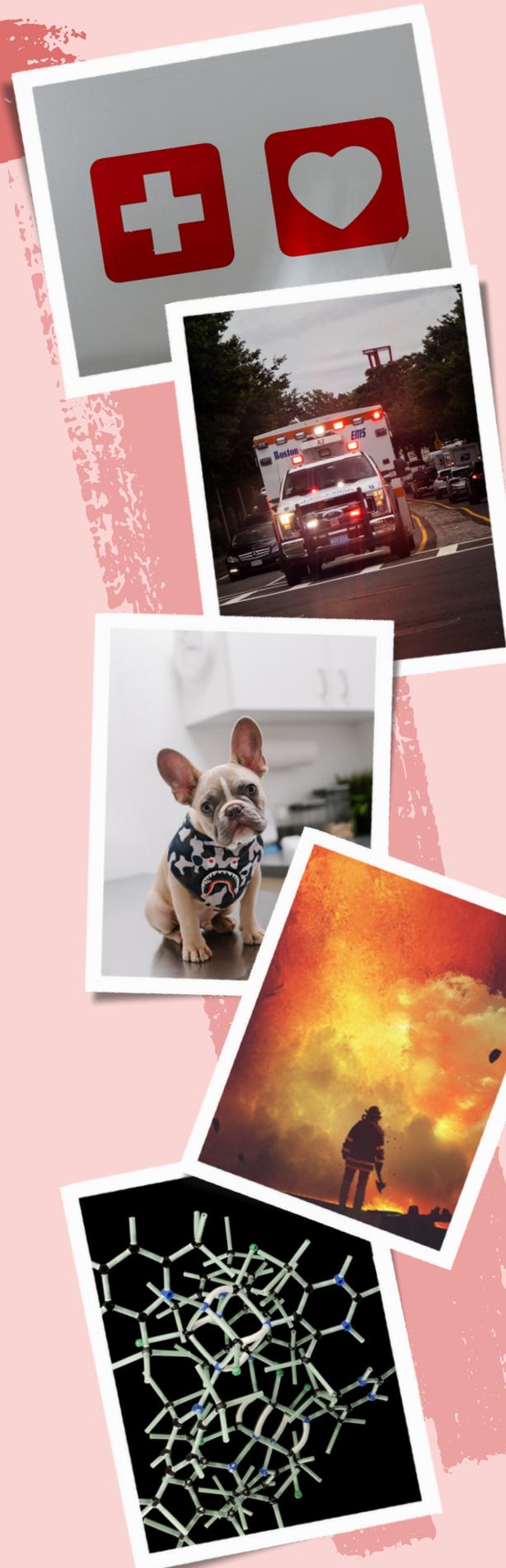# EXPLORE
Health Path

CAREER CATEGORIES

- Medical, Heath Care and Animal Health

- First Responders

- Community, Human and Personal Care Services

- Sciences (Life and Social)

EXPLORE

Medical, Health Care and Animal Health

CAREER EXAMPLES

⚕ Medical and Health Care

- Physician
- Surgeon
- Pediatrician
- Nurse
- Registered Nurse (RN)
- Licensed Practical Nurse (LPN)
- Nurse Practitioner
- Physician Assistant
- Medical Assistant
- Nursing Aide/Assistant
- Pharmacist
- Medical Laboratory Technologist
- Radiologic Technologist
- Physical Therapist
- Occupational Therapist
- Occupational Health and Safety Specialist
- Speech-Language Pathologist
- Respiratory Therapist
- Paramedic
- EMT (Emergency Medical Technician)
- Clinical Research Coordinator
- Health Information Technician
- Healthcare Consultant
- Dietitians and Nutritionist
- Home Health Aide
- Alternative and Complementary Medicine
- Allied Health and Medical Assisting Services
- Podiatrists
- Psychiatrist
- Chiropractor
- Dentist
- Dental Hygienist
- Genetic Counselors
- Optometrist
- Optician
- Ophthalmologist
- Orthotists and Prosthetists
- Audiologist
- Massage Therapist
- Dermatologist
- Certified Midwife
- Medical Billing Specialist
- Medical Coding Specialist
- Hospital Administrator
- Public Health Specialist
- Medical Transcriptionist

🐾 Animal Health

- Veterinarian
- Veterinary Technician
- Veterinary Assistant
- Animal Caretaker
- Animal Behaviorist
- Animal Control Officer
- Zoologist
- Wildlife Biologist
- Veterinary Pathologist
- Animal Nutritionist
- Animal Physical Therapist
- Animal Groomer
- Animal Trainer
- Equine Therapist
- Veterinary Practice Manager
- Animal Welfare Advocate
- Veterinary Radiologist
- Veterinary Surgeon
- Veterinary Ophthalmologist
- Veterinary Dermatologist
- Animal Shelter Manager
- Animal Nutrition Sales Representative
- Veterinary Laboratory Technician
- Animal Pharmaceuticals Researcher
- Veterinary Acupuncturist
- Animal Breeder
- Veterinary Anesthetist
- Veterinary Epidemiologist
- Zookeeper
- Veterinary Parasitologist
- Wildlife Rehabilitator
- Veterinary Dentist
- Animal Massage Therapist
- Veterinary Toxicologist
- Veterinary Immunologist
- Animal Geneticist
- Veterinary Microbiologist
- Veterinary Pathobiologist
- Veterinary Virologist
- Veterinary Clinical Pharmacologist

EXPLORE
Medical, Health Care and Animal Health

Pick 2-3 jobs that interest you from the list of career examples. Write them down.

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○ _____

○ _____

Where (location) would you need to go to pursue (or get) these jobs?

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What are some of the qualifications (for example: skills, degrees, knowledge) you need to have these jobs?

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How could you make an impact in the world with these jobs?

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EXPLORE
Medical, Health Care and Animal Health

APPLYING GEOGRAPHY

Medical and Health Care

Geographical data is used to **map the spread of diseases, track disease prevalence, and identify high-risk areas**, enabling targeted healthcare interventions and resource allocation.

Geography helps in analyzing **healthcare accessibility** by assessing geographic barriers, population distribution, and healthcare facility locations to ensure equitable access to healthcare services for all communities.

Geographical knowledge is utilized to **assess environmental health risks**, such as air and water quality, soil contamination, and exposure to toxins, enabling the implementation of effective public health policies and interventions.

Geography is employed in conducting **epidemiological studies** to examine the relationship between disease patterns and geographic factors, contributing to the understanding of disease transmission and the development of effective public health strategies.

Geographical analysis aids in planning the **location of health facilities**, considering population density, demographic trends, and transportation accessibility to ensure the efficient and effective delivery of healthcare services to communities.

Geography plays a crucial role in **disaster response and management** by assessing geographical vulnerabilities, identifying at-risk populations, and planning for emergency healthcare services to mitigate the impact of natural disasters and health emergencies.

Geographical techniques are used to conduct **spatial analysis of health data**, allowing for the identification of health disparities, geographic clusters of diseases, and underlying social determinants of health for targeted health interventions.

Geography is applied in **health policy planning** by assessing regional health disparities, demographic variations, and socioeconomic factors to develop comprehensive and inclusive health policies that address the diverse healthcare needs of different geographic populations.

Geography aids in the implementation of **telehealth and remote healthcare services** by assessing technological infrastructure, geographic connectivity, and healthcare access gaps to ensure the effective delivery of virtual healthcare services to remote and underserved communities.

Geography is utilized in **global health initiatives** by analyzing geographic variations in disease prevalence, healthcare infrastructure, and socio-cultural contexts to develop international health programs and policies that address global health challenges and promote health equity worldwide.

EXPLORE
Medical, Health Care and Animal Health

APPLYING GEOGRAPHY

🐕 *Animal Health*

Geographical data is used to monitor the **spread of animal diseases, track disease outbreaks, and identify geographic hotspots**, facilitating targeted disease control and prevention measures.

Geography aids in **mapping zoonotic diseases**, assessing their geographic distribution, and identifying regions where human-animal interactions pose a high risk of disease transmission, enabling the implementation of strategies for disease management.

Geographical analysis is used to plan the **location of veterinary practices**, considering animal population density, transportation accessibility, and regional demand for veterinary services to ensure the provision of adequate veterinary care for different communities.

Geography is employed in **monitoring wildlife health**, assessing habitat changes, and tracking wildlife migration patterns to understand the impact of environmental factors on wildlife health and to develop conservation strategies for wildlife populations.

Geography plays a crucial role in **animal emergency response and disaster management** by assessing geographic vulnerabilities, identifying at-risk animal populations, and planning for the provision of veterinary care during natural disasters and emergencies.

Geographical techniques are used in conducting **veterinary epidemiological studies**, allowing for the analysis of disease prevalence among animal populations, the identification of disease clusters, and the investigation of environmental factors that contribute to animal health risks.

Geography aids in controlling **vector-borne diseases** in animals by assessing vector habitats, identifying disease transmission patterns, and implementing targeted vector control measures to minimize the spread of vector-borne diseases among animal populations.

Geographical analysis is employed in **wildlife conservation planning** by assessing biodiversity hotspots, identifying critical habitats, and mapping wildlife corridors to develop conservation strategies that promote the protection and preservation of endangered animal species.

Geography is applied in the **development of animal health policies**, considering regional animal health disparities, environmental risk factors, and socio-economic contexts to implement comprehensive animal health policies that ensure the welfare and well-being of animals in different geographic regions.

GIS technology is utilized in **veterinary research** for spatial data analysis, disease modeling, and habitat assessment, allowing for the integration of geographical information into veterinary research projects to enhance the understanding of animal health patterns and to support evidence-based veterinary medicine.
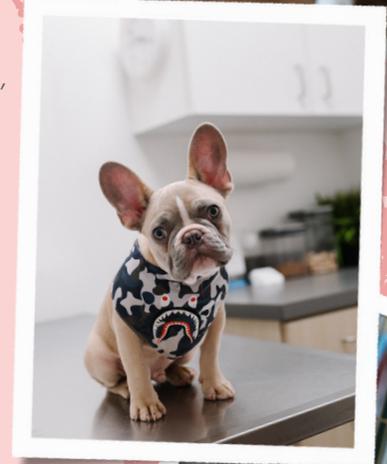
Medical, Health Care and Animal Health

Medical, Health Care, and Animal Health

"My job is more like a vocation or a calling or an intersection if you will, so I'm a geographer and I'm a holistic practitioner. That means a lot of my research is healing arts oriented, so meditation, ceremony, ritual, what some people may call stress relief or stress regulation practices, what I also call cultural healing ways are really central to what I do in my practice as a consultant and a freelance kind of facilitator but those are also central to my research as a geographer. So at that nexus of holistic wellness and geography I do a combination of research, art making, and facilitation. The geography path and how that really prepared me was to look at space and place in a critical way and in that spatial way that geography does so beautifully. [...] what geography brings to it is this understanding of how different places still play a role, how historical creation a place impacts the present, how we can think about gentrification through that lens, cultural healing ways through that lens has been really inspiring and instrumental. [...] One of the words I use is social justice, like understanding social justice as a concept and how it plays out over space, place, and time -- those key kind of points of geography, those key coordinates of geography [...]."

Naya Jones, PhD
Managing Director,
Get Rooted Consulting
Wisconsin
Link to Interview

"An awareness of place as a socially constructed and complex phenomenon has been a talismanic point of reference for the new health geography. The objective has been to show that 'places matter' with regard to health, disease and health care, and it has been followed through in three strikingly different ways. First, there has been a group of studies that are grounded in the specifics of particular localities. This group includes work on community responses to threats to health [...] and studies of the place-specific aspects of health service restructuring [...]. Much of this work has the 'local place', ranging from the home to urban and rural localities, as its focus. A second group of studies has considered the notion of 'landscape' and brought an enhanced awareness of the cultural importance of place and the intersection of the cultural and the politico-economic in the development of place-specific landscapes of health care and health promotion. From landscapes of despair [...] through landscapes of restructuring [...] to therapeutic landscapes [...], landscape has been an important motif in the development of the geography of health. By extension, it has also underpinned work including the geography of asylums as places of refuge [...]."

- Robin Kearns and Graham Moon (2002). From medical to health geography:novelty, place and theory after a decade of change. Progress in Human Geography 26,5: 605–625. Link to Article

"Using veterinary methods, such as fecal exams, for parasite analysis and physical exams of livestock to determine health status gave me information not usually available to geographers. Veterinary skills also provided additional modes of analysis and interpretation. When asked what causes diarrhea in their livestock, nomads sometimes report its cause as "dirty grass." Knowing that there exist specific kinds of intestinal parasites of livestock whose infective larvae actually crawl up to the tips of grass blades to facilitate ingestion, and that these cause serious disease, was important in my research. Because this occurs mostly during the wetter parts of the year, it is no less important to know that anthrax spores pose a similar threat during dry periods and after harvests, when livestock graze especially close to the soil surface. Other researchers may have discounted the "dirty grass" answer as ignorant or superstitious, or as some kind of general infectious condition. For my work, the answer, taken in conjunction with observations about time of year and rain/drought conditions, provided important and concise information. I cross-checked this information against other interview questions concerning parasites seen by the nomads at slaughter, against diseases reported by the government agriculture office, and against the fecal exams I conducted. The ability to move between social science and veterinary languages when interviewing nomads or, equally, veterinary extension agents, made my research more effective."

- Diana Davis (2001). Veterinary Geography as Interdisciplinary Research. Geographical Review, 91(1-2), 463-471. Link to Article.

EXPERIENCE
Medical, Health Care and Animal Health

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Name: _____

Job Title: _____

Name: _____

Job Title: _____

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EXTENSION IF POSSIBLE, TRY AND INTERVIEW THE PERSON AND ASK THEM HOW THEY USE GEOGRAPHY! WRITE YOUR FINDINGS IN THE OPEN SPACES

Medical, Health Care and Animal Health

Medical, Health Care and Animal Health

Latin America and Caribbean	Europe
Middle East and North Africa	**Sub-Saharan Africa**
Central Asia and Russia	**East Asia**
South Asia	**Oceania**

Medical, Health Care and Animal Health

Medical, Health Care and Animal Health

Physical Geography	Human Geography
Places and Region	**Environment and Society**

First Responders

CAREER EXAMPLES

First Responders

Emergency Medical Technician (EMT)
Paramedic
Firefighter
First Responders
Flight Paramedic
911 Emergency Dispatcher
Critical Care Paramedic
Trauma Nurse
Emergency Room Physician
Disaster Relief Medical Officer
Search and Rescue Medic
Tactical Medic
Wilderness Medic
Combat Medic
Pre-hospital Care Nurse
Emergency Department Nurse
Air Ambulance Medical Crew
Hospital Trauma Team Member
Disaster Response Nurse
Critical Care Transport Nurse
Emergency Medical Dispatcher
Emergency Room Technician
Mobile Intensive Care Nurse

EXPLORE
First Responders

Pick 2-3 jobs that interest you from the list of career examples. Write them down.

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Where (location) would you need to go to pursue (or get) these jobs?

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What are some of the qualifications (for example: skills, degrees, knowledge) you need to have these jobs?

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How could you make an impact in the world with these jobs?

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EXPLORE
First Responders

APPLYING GEOGRAPHY
🧰 *First Responders*

First responders use geographic knowledge to quickly and efficiently **navigate** through various terrains and road networks **to reach the scene of an emergency**. **Knowledge of the local geography** helps first responders identify potential access points in remote or rural areas, allowing them to reach individuals in need of assistance, even in challenging and less accessible terrains. They also use geographic knowledge to quickly **locate critical facilities** such as hospitals, police stations, fire stations, and other emergency services in the vicinity of the emergency, ensuring timely access to necessary resources.

Understanding geographical data helps them **identify high-risk areas**, such as high-crime areas, hazardous zones prone to natural disasters, and regions with high accident rates, allowing them to be better prepared for potential emergencies.

They use geographic knowledge to **plan and establish the most efficient evacuation routes** during natural disasters or other emergencies, ensuring the safe and swift movement of affected populations to secure locations. And by understanding the geography of the affected area, first responders can better **assess the impact of natural disasters** such as floods, earthquakes, or wildfires, and plan their response and relief efforts accordingly.

Geographic information helps first responders create maps, mark search areas, and determine the most effective **search and rescue strategies** when looking for missing persons or individuals in distress. **Understanding terrain and topography** helps them anticipate challenges in accessing remote or rugged areas, enabling them to make informed decisions about the appropriate equipment and resources needed for the operation.

They leverage their geographic knowledge to **manage traffic during emergencies** by controlling traffic flow and redirect vehicles away from affected areas, ensuring the smooth movement of emergency vehicles and reducing congestion.

They use geographic data to **identify potential environmental hazards** such as chemical plants, gas pipelines, or nuclear facilities, allowing them to take necessary precautions and develop effective response plans. By understanding these geographical vulnerabilities of their jurisdiction, first responders can **develop comprehensive disaster preparedness plans** tailored to the specific risks and challenges presented by the local geography.

First responders leverage geographic knowledge to **understand the local weather patterns** and how they might impact their response efforts, enabling them to anticipate and prepare for weather-related emergencies such as storms, floods, or extreme heat.

First responders use their geographic knowledge to **collaborate with neighboring jurisdictions** during large-scale emergencies, facilitating the sharing of resources, manpower, and vital information for a more effective and coordinated response across different geographical areas.

EXPERIENCE
First Responders
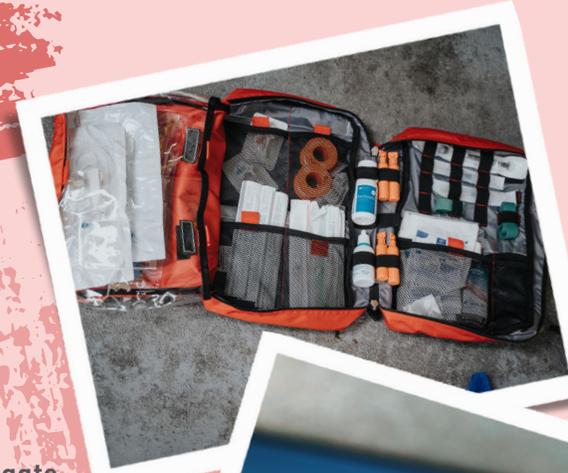
First Responders

"Spatial justice is concerned with equitable access to resources and opportunities. In many cases, improvements in living conditions and the distribution of services have been unequally shared across individuals, groups and geographical areas, with potential health consequences on vulnerable groups. There is indeed growing evidence of associations between residential location in socially deprived areas and a wide variety of health conditions, premature and preventable deaths and mental health and suicide. Socioeconomically disadvantaged areas are more likely to amplify conditions of material deprivation through a number of underlying interconnected mechanisms, leading to cumulative vulnerabilities : (1) neighbourhoods that concentrate low-income groups with higher potential for poor health outcomes; (2) environments with high exposure to risk factors such as air pollution and road traffic and (3) environments that discourage healthy behaviours, for example, due to low access to green areas, shops and facilities. Since these disturbances are common, although not systematically associated to social deprivation, the geography of public healthcare facilities is normally expected to attenuate socio-spatial discrepancies by providing equal opportunities for at-risk population. This is not always the case, however, as the so-called 'inverse care law' prevails in many settings, meaning that deprived areas tend to have worse geographical access to healthcare. Contrasting with these conclusions, other studies have found that disadvantaged areas are actually better served. Low geographical accessibility to healthcare services has been found to be a strong factor of reduced utilisation. The well-known distance-decay effect has been identified in the usage of health services. This, again, tends to deepen the gap between better-off and deprived areas. While disparities in access to healthcare and their resulting health outcomes are increasingly well documented, most of the existing literature on travel times to hospital emergency services are based either on private car use or on travel time only between patients' location and hospital. Access to emergency services not only depends on the distance to the nearest hospital, but also on how far the patients are from an emergency medical services (EMSs) that can take them to the final destination."

- Katielle Susane do Nascimento Silva & Miguel Padeiro (2020). Assessing inequalities in geographical access to emergency medical services in metropolitan Lisbon: A cross-sectional and ecological study. BMJ Open. Link to Article

"Emergency medical service units average 7 minutes from the time of a 911 call to arrival on scene. That median time increases to more than 14 minutes in rural settings, with nearly 1 of 10 encounters waiting almost a half hour for the arrival of EMS personnel. Longer EMS response times have been associated with worse outcomes in trauma patients. In some, albeit rare, emergent conditions (eg, cardiopulmonary arrest, severe bleeding, and airway occlusion), even modest delays can be life threatening."

- Howard K. Mell, MD, MPH, CPE, Shannon N. Mumma, MD, Brian Hiestand, MD, MPH, Brendan G. Carr, MD, Tara Holland, MPH, & Jason Stopyra, MD (2017). Emergency Medical Services Response Times in Rural, Suburban, and Urban Areas. JAMA Surgery 152(10): 983-984. Link to Article.

"The research indicated that EMS in urban areas are more likely to have shorter prehospital times, response times, on-scene times, and transport times when compared to EMS operating in rural areas. Additionally, urban patients with out-of-hospital cardiac arrest or trauma were found to have higher survival rates than rural patients. EMS in urban areas were generally associated with improved performance measures in key areas and associated higher survival rates than those in rural areas. These findings indicate that reducing key differences between rural and urban settings is a key factor in improving trauma patient survival rates. One of the key differences between rural and urban EMS related to on-scene time, and the increased time in rural locations could not be attributed solely to geographic isolation. It is possible that EMS require additional time on-scene in rural areas as a consequence of the longer response time, but this was not clear, and other unexplored factors could be evident."

- Ahmed Ramdan M. Alanazy, Stuart Wark, John Fraser & Amanda Nagle (2019). Factors Impacting Patient Outcomes Associated with Use of Emergency Medical Services Operating in Urban Versus Rural Areas: A Systematic Review. International Journal of Environmental Research and Public Health, 16(10): 1728. Link to Article.

EXPERIENCE
First Responders

FIND LOCAL GEOGRAPHERS

WRITE DOWN THEIR NAME, JOB TITLE, AND USE THE LINES TO WRITE DOWN WHAT THEY DO

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Name: _____

Job Title: _____

Name: _____

Job Title: _____

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EXTENSION IF POSSIBLE, TRY AND INTERVIEW THE PERSON AND ASK THEM HOW THEY USE GEOGRAPHY! WRITE YOUR FINDINGS IN THE OPEN SPACES

EXPAND

First Responders

TAKE IT GLOBAL
FIND EXAMPLES OF THESE CAREERS IN DIFFERENT REGIONS

First Responders

Latin America and Caribbean	Europe
Middle East and North Africa	**Sub-Saharan Africa**
Central Asia and Russia	**East Asia**
South Asia	**Oceania**

EXPAND

First Responders

Powerful Geography

MAKING CONNECTIONS
HOW IS THIS CAREER <u>IMPACTED</u> <u>BY</u> THESE THEMES?
HOW DOES THIS CAREER <u>IMPACT</u> THESE THEMES?

First Responders

Physical Geography	Human Geography
Places and Region	**Environment and Society**

EXPLORE
Community, Human and Personal Care Services

CAREER EXAMPLES

Community, Human and Personal Care Services

Community Health Worker
Health Educator
Daycare Centers
Elderly Care Facilities
Rehabilitation Counselors
Recreational Therapists
Health Promotion Specialist
Community Outreach Coordinator
Public Health Advocate
Community Health Nurse
Health and Wellness Coordinator
Community Health Researcher
Patient Advocate
Health Program Coordinator
Community Health Advisor
Health Disparities Analyst
Health Policy Analyst
Community Nutritionist
Community Health Planner
Health Coach
Social and Community Service Manager
Community Health Development Officer
Nonprofit Health Organization Administrator
Health Equity Coordinator
Community Health Consultant
Health Information Specialist
Community Health Volunteer Coordinator
Community Health Grant Writer
Community Health Improvement Specialist
Fitness Trainers and Instructors
Emergency Management Directors

EXPLORE
Community, Human and Personal Care Services

Pick 2-3 jobs that interest you from the list of career examples. Write them down.

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Where (location) would you need to go to pursue (or get) these jobs?

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What are some of the qualifications (for example: skills, degrees, knowledge) you need to have these jobs?

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How could you make an impact in the world with these jobs?

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EXPLORE
Community, Human and Personal Care Services

APPLYING GEOGRAPHY

Community, Human, and Personal Care Services

Geographical data helps in **identifying underserved communities** that may have limited access to healthcare services, allowing professionals to allocate resources and develop targeted outreach programs.

Personal healthcare professionals use geographic data to **understand regional health disparities** and their impact on individual patients. This understanding helps them tailor healthcare plans and interventions that account for the specific challenges and resources available in the patient's geographic area.

Geographical information aids in **mapping the prevalence of diseases** within specific regions, enabling professionals to identify patterns and implement targeted health interventions and preventive measures.

Professionals use geographic data to **plan and allocate resources for the development of healthcare facilities**, ensuring that communities have adequate access to hospitals, clinics, and other essential health services.

Geographic knowledge helps in **understanding environmental health risks and factors** that may impact community health, such as air and water quality, enabling professionals to implement measures to mitigate these risks and promote healthier living conditions.

Professionals use geographic information to **plan and execute targeted vaccination and immunization campaigns**, ensuring that vulnerable populations receive necessary vaccines and are protected against preventable diseases.

Geographic data helps in understanding the demographics and cultural backgrounds of communities, enabling professionals to develop culturally sensitive **health education programs** tailored to the specific needs of different populations.

Professionals use geographic knowledge to **coordinate emergency response services** during health crises, ensuring that resources and support are efficiently distributed to areas in need, especially during outbreaks or natural disasters.

Geographical data analysis helps in **assessing the accessibility of healthcare services** for different communities, allowing professionals to identify gaps and develop strategies to improve access for underserved populations.

Professionals use geographic data to analyze the **influence of social determinants of health**, such as income, education, and access to resources, on community well-being, helping them develop targeted interventions to address these disparities.

Geographic knowledge assists in **planning and implementing community health interventions**, such as health fairs, wellness programs, and screenings, ensuring that these initiatives are strategically located and accessible to the target population.

EXPERIENCE
Community, Human and Personal Care Services

Powerful Geography

Community, Human and Personal Care Services

"Without health workers there is no health, and understanding the geographical complexities of occupational hierarchies, distribution, location and circulation of human health resources remains a rich and necessary field of health geography. The pandemic has made it clear that developed world health systems rely on internationally trained immigrant health professionals to fulfil critical roles, but their centrality contrasts with issues of hierarchy and division that beset the health professions.

The consequences of the pandemic reflect and exacerbate existing societal inequality, and strengthen the case for global action to enhance human life as articulated through the aspirational agenda of the Sustainable Development Goals (SDGs). SDG 3 "Good Health and Wellbeing" is central to all the multi- and inter-sectoral goals that comprise the ambitious plan of action for people, planet and prosperity. Health care professionals are central to achieving the SDGs. [...] Health geographers have not fully recognized the significance and the rich potential fields of analysis that accompany a focus on health care workers. The COVID-19 pandemic has reasserted the importance of attending to this issue."

- Margaret Walton-Roberts (2021). Covid-19 and Health Professionals: Recommitting to a Global Health Agenda. In "Covid-19 and Similar Futures" (pp. 373-380). Link to Chapter.

"Geography and health are intrinsically linked. Where we are born, live, study and work directly influences our health experiences: the air we breathe, the food we eat, the viruses we are exposed to and the health services we can access. The social, built and natural environments affect our health and well-being in ways that are directly relevant to health policy. Spatial location (the geographic context of places and the connectedness between places) plays a major role in shaping environmental risks as well as many other health effects. For example, locating health care facilities, targeting public health strategies or monitoring disease outbreaks all have a geographic context. Informed decision-making leads to the development of effective public health policy based on evidence. We need to understand disease risk factors and how risks such as genetics, lifestyle, environment and occupation interact with the social, built and natural environments. Understanding geography, including the arrangement of health services and the location and nature of environmental exposures, is crucial in assessing the interrelations inherent in many health-related risk exposures."

- Trevor J.B. Dummer (2008). Health Geography: Supporting Public Health Policy and Planning. Canadian Medical Association Journal, 178(9): 1177-1180. Link to Article

"Geo-computation, from my understanding, is the "art and science of solving complex geographical (spatial) problems through computation" (Source unknown). I want to take this opportunity to iterate that Geographical Information Systems (GIS) and Geographical Information Sciences (GISc) are NOT interchangeable. I strongly believe that we as geographers can do a lot more than make maps. This belief has been the central tenet of my career in public service. We can assist decision-making in the most scientific method with our understanding of space and spatial changes over time. I have several projects that are currently being implemented where I am using geo-computational methodologies, but we will have to wait for them to be released through SAMHSA. For me, it is impossible to resolve mental health and substance abuse disparities and encourage health equity without spatial thinking and geo-computation. SAMHSA (specially CBHSQ) understands that and encourages discussion on applying geo-computation while also supporting and encouraging researchers to use https://findtreatment.samhsa.gov/ for analytical and geo-computational purposes, among many other projects."
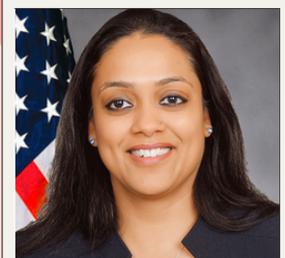
Suparna Das
Branch Chief Supervisory Statistician at the Treatment Services Branch, Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration
Link to Interview

EXPERIENCE
Community, Human and Personal Care Services

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Name: _____

Job Title: _____

INSTRUCTIONS CONDUCT AN ONLINE SEARCH TO FIND LOCAL INDIVIDUALS WHO DO THE JOB YOU ARE INTERESTED IN.

WRITE DOWN THEIR NAME, JOB TITLE, AND USE THE LINES TO WRITE DOWN WHAT THEY DO

Name: _____

Job Title: _____

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EXTENSION IF POSSIBLE, TRY AND INTERVIEW THE PERSON AND ASK THEM HOW THEY USE GEOGRAPHY! WRITE YOUR FINDINGS IN THE OPEN SPACES

EXPAND
Community, Human and Personal Care Services

TAKE IT GLOBAL
FIND EXAMPLES OF THESE CAREERS IN DIFFERENT REGIONS

Powerful Geography

Community, Human and Personal Care Services

Latin America and Caribbean	Europe
Middle East and North Africa	**Sub-Saharan Africa**
Central Asia and Russia	**East Asia**
South Asia	**Oceania**

EXPAND

Community, Human and Personal Care Services

MAKING CONNECTIONS

HOW IS THIS CAREER <u>IMPACTED BY</u> THESE THEMES?
HOW DOES THIS CAREER <u>IMPACT</u> THESE THEMES?

Community, Human and Personal Care Services

Physical Geography	Human Geography
Places and Region	**Environment and Society**

EXPLORE
Sciences

CAREER EXAMPLES

Life Sciences

Medical Scientist
Biomedical Engineer
Microbiologist
Immunologist
Epidemiologist
Biostatistician
Biochemist
Biophysicist
Pharmacologist
Toxicologist
Clinical Research Associate
DNA and Genetic Scientist
Pathologist
Virologist
Neuroscientist
Molecular Biologist
Health Data Analyst
Public Health Researcher
Bioinformatics Specialist
Medical Lab Technologist
Health Informatics Specialist
Clinical Trials Researcher
Pharmaceutical Research Scientist
Medical Genetic Counselor
Clinical Immunologist
Cell Biologist
Exercise Physiologist
Nutritional Scientist
Biomedical Ethicist
Health Economist
Medical Entomologist
Health and Safety Engineer

Social Sciences

Public Health Researcher
Health Policy Analyst
Health Educator
Medical Sociologist
Community Health Worker
Health Psychologist
Health Program Evaluator
Social Worker in Health Care
Health Care Policy Advisor
Epidemiologist

EXPLORE
Sciences

Pick 2-3 jobs that interest you from the list of career examples. Write them down.

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- ○ _____
- ○ _____

Where (location) would you need to go to pursue (or get) these jobs?

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What are some of the qualifications (for example: skills, degrees, knowledge) you need to have these jobs?

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How could you make an impact in the world with these jobs?

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APPLYING GEOGRAPHY

Life Science

Life scientists use geographic data to **identify and understand health disparities** among different populations, helping them pinpoint geographical regions where specific health issues are more prevalent. This information can guide public health interventions and resource allocation to address these disparities. Geographic knowledge allows life scientists to study the **spatial distribution of diseases**, such as the prevalence of certain diseases in different regions. This can provide valuable insights into the environmental, social, and behavioral factors influencing disease transmission and help in the development of targeted public health strategies. By considering geographic factors, life scientists can assess how **environmental conditions**, such as air quality, water quality, and exposure to pollutants, may impact human health in specific regions. This understanding can inform public health policies and interventions aimed at reducing environmental health risks. Geographic knowledge helps them examine the **effects of urban environments** on human health, including factors such as access to healthcare, availability of green spaces, and exposure to environmental pollutants. Understanding these influences can inform urban planning and public health initiatives aimed at promoting healthier living conditions in urban areas.

Life scientists use geographic data to **map and analyze population health trends** across different geographic regions, enabling them to identify areas with specific health needs and develop targeted healthcare interventions tailored to the unique challenges of each location. Geographic knowledge is utilized to **study human genetic diversity** across different populations and geographical regions. This research helps in understanding the genetic factors contributing to the susceptibility or resistance to certain diseases and can aid in the development of personalized and region-specific healthcare approaches. They use geographic information to study the **impact of social determinants of health**, such as socioeconomic status, education, and access to healthcare, on the well-being of different communities. This understanding can inform policies and interventions aimed at addressing social disparities and improving overall population health. Life scientists consider geographic factors to **assess the impact of climate change on human health**, including the spread of vector-borne diseases, changes in food security, and the increase in natural disasters. This information can guide the development of adaptation strategies and policies to minimize the adverse health effects of climate change on human populations.

Social Science

Social scientists use geographic data to conduct **spatial analyses of various social phenomena**, such as crime rates, population distribution, and socioeconomic disparities, helping them understand how these factors are influenced by geographical location and spatial patterns. Geographic knowledge enables them to **investigate regional disparities** in access to resources, such as education, healthcare, and employment opportunities, allowing them to identify areas that require targeted interventions to address social inequalities. They use geographic information to **study cultural landscapes**, including the spatial distribution of cultural practices, traditions, and belief systems, helping them understand the connections between culture and geography and how these interactions shape societies. Geographic data is used to **map social networks and connections** within communities, helping social scientists visualize the relationships between individuals, groups, and organizations in specific geographic areas and analyze the social dynamics within these networks. They utilize geographic knowledge to **assess patterns of migration, urbanization, and demographic changes**, allowing them to understand the social implications of population movements and the impact of urban development on communities and societies.

EXPERIENCE
Sciences

Life and Social Science

"I find that if an effect is strong enough to matter to public health, it will be evident through maps and scatterplots and straightforward regression models. More sophisticated methods can help tease out subtle differences, but while these may be statistically significant, they are rarely clinically significant. In other words, we needn't worry too much about differences of 10% when there are enough 50% and 100% differences to go around. Accordingly, I still rely quite heavily on the spatial analysis techniques and methods I learned in my master's level courses, in particular. What has been most valuable has not been the specific technical skills (I don't do a whole lot of GIS, in fact), but the repeated application of geographical thinking: repeatedly asking the question, why does something exist more in one place than in another place? Approaching problems from that angle often leads to an insight no one else has had before."

Nancy Tian, PhD
Public Health Analyst
U.S. Public Health Service
Commissioned Corps
Link to Interview
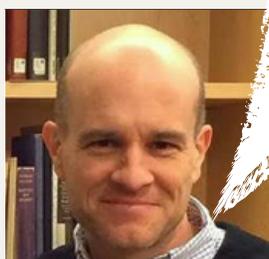
Frank Boscoe, PhD
Research Scientist
New York State
Cancer Registry
Link to Interview

"Geography is critical to my work; I stress the value of GIS and mapping skills in providing visualization to the management team, which can be as simple as information about where healthcare facilities are located. My advice for current students is to broaden their technical skills by taking GIS related courses, as well as those in statistics and programming. To strengthen her knowledge as a public health analyst, she is working towards sharpening her SAS programming skills through training and reading related technical articles. Her continuing education goal is to pursue a master's degree in public health to enhance my comprehensive understanding of public health issues. Reflecting on geographic skills used in the workplace, I recognize the importance of the applications of GIS and spatial statistics in public health, especially in Emergency Management. Equally important, she observes, are project management skills that include the ability to think independently and "break down a project into smaller pieces to sequentially complete each part and then to bring the individual parts together."

"Geography became my favorite subject in middle school. Being the student with the most geographic knowledge in my class helped me build great confidence, which eventually led me to explore a career in geography. After choosing GIS as my undergraduate major, my determination to choose a career as a geographer was enhanced by the joy of creating knowledge from data. Ever since then, I have been consecutively involved in multiple projects funded by U.S. Department of Homeland Security, U.S. National Science Foundation, and Canadian Institutes of Health Research to apply my geospatial knowledge and skills to analyze, model, and visualize problems resulting from the interaction of social and physical environments. My training in geography has helped me to identify research topics with spatial components and provided me with the skills to conduct research independently. I have also become proficient in performing desktop geospatial analysis, building web-based applications, and developed a self-motivation to keep learning new skills. I believe that all the learning and training experiences have improved my competency in the job market."

Xiaohui Liu, PhD
Postdoctoral Intramural
Research Training
Awardee, National
Institutes of Health
Link to Interview

EXPERIENCE
Sciences

FIND LOCAL GEOGRAPHERS

INSTRUCTIONS CONDUCT AN ONLINE SEARCH TO FIND LOCAL INDIVIDUALS WHO DO THE JOB YOU ARE INTERESTED IN.

WRITE DOWN THEIR NAME, JOB TITLE, AND USE THE LINES TO WRITE DOWN WHAT THEY DO

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_____
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Name: _____

Job Title: _____

Name: _____

Job Title: _____

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EXTENSION IF POSSIBLE, TRY AND INTERVIEW THE PERSON AND ASK THEM HOW THEY USE GEOGRAPHY! WRITE YOUR FINDINGS IN THE OPEN SPACES

Sciences

TAKE IT GLOBAL
FIND EXAMPLES OF THESE CAREERS IN DIFFERENT REGIONS

Sciences

Latin America and Caribbean	Europe
Middle East and North Africa	**Sub-Saharan Africa**
Central Asia and Russia	**East Asia**
South Asia	**Oceania**

EXPAND

Sciences

MAKING CONNECTIONS

HOW IS THIS CAREER <u>IMPACTED</u> <u>BY</u> THESE THEMES?
HOW DOES THIS CAREER <u>IMPACT</u> THESE THEMES?

Sciences

Physical Geography	Human Geography
Places and Region	**Environment and Society**

EXPAND
Health Path

REFLECTIONS
WHAT IS GEOGRAPHY'S ROLE IN
THE CAREER THAT YOU ARE
INTERESTED IN AND ASPIRE TO
BECOME? WRITE A SUMMARY.