Postdoctoral Researcher– Quantitative Ecology, Human-Wildlife Interactions & SARS-CoV-2

The URBANxNATURE Lab at the University of Maryland is searching for a postdoctoral researcher to work on a project studying human-wildlife interactions with an eye towards SARS-Cov-2 and other disease transmission. Multiple studies have identified SARS-CoV-2 infections in white-tailed deer making deer a species of interest in understanding spillover risk between humans and wildlife. The potential for human-deer interactions is greatest in urban and suburban areas, due to higher human population numbers and increased densities of deer. Therefore, urban deer serve as a specific species of concern for the spread of SARS-CoV-2 between humans and animals. To better understand potential interactions between humans and deer, we will use passive sampling techniques (camera traps) and human mobility data (e.g., SafeGraph) to quantify the rates of co-occurrence between deer and humans at specific locations across multiple US cities.

This project will leverage publicly available, aggregated human mobility data and deer observation data from a multi-city camera trapping network – The Urban Wildlife Information Network (UWIN) – to formulate human-deer interaction models to estimate the probability of spatio-temporal overlap of deer and humans and predict the risk of potential disease spread. The postdoctoral scholar will be responsible for the following work:

1. Working with the Urban Wildlife Information Network to collect, collate, and curate camera trap observations of deer from all cities for which data are available
2. Procuring, collating, and curating human mobility data (e.g., SafeGraph Patterns Data)
3. Collecting and curating environmental variables associated with human and camera trap locations
4. Conducting statistical analyses to quantify human-deer interactions and identify correlates associated with the spatio-temporal overlap of humans and deer
5. Developing a risk assessment and/or risk maps of the probability of spatio-temporal overlap between humans and deer
6. Developing a prototype model that incorporates white-tailed deer movement (using existing GPS-collar data from Howard County, MD), camera trap data (UWIN), human mobility data, and surveillance data (USDA) to predict transmission risks between humans and deer and identify potential mitigation strategies to reduce potential human-deer interaction.

The postdoctoral researcher will be supervised by Dr. Travis Gallo in the Department of Environmental Science and Technology at the University of Maryland and will work closely with collaborators at the University of Maryland, George Mason University, the Lincoln Park Zoo in Chicago, various UWIN partners, and the USDA National Wildlife Research Center.

Position structure:
The position is funded for 24 months. The successful candidate will be hired through the University of Maryland, College Park and be based on the main campus, though remote options may be considered. The anticipated start date is November/December, but the in-person start date is negotiable.

The postdoctoral researcher will be provided an annual salary ranging between $60,000 - 65,0000, plus benefits, a computer (based at UMD) with high processing speeds, office space on campus, and travel funds to attend a national conference. This position is an excellent opportunity to engage with academic, agency, and NGO professionals and conduct cutting-edge quantitative research with application to conservation and public health.

Qualifications:

Minimum qualifications:

1. Ph.D. degree in wildlife ecology, disease ecology, quantitative ecology, or related field by the anticipated start date
2. Expertise in R coding language and previous experience constructing Bayesian hierarchical models and/or agent-based (individual-based) models.
3. Expertise working with and analyzing large spatial data sets using R, Python, QGIS, and/or ArcGIS
4. Demonstrated desire and proven ability to publish in peer-reviewed journals.
5. Excellent written and personal communication skills
6. The ability to work both independently and collaboratively, and to meet deadlines.

Desired qualifications:
Recognizing that the perfect candidate will likely not meet all these desired qualifications, competitive candidates will have a background working with some combination of occupancy models, species distribution models, species-interaction models, wildlife observation data, large complex data sets, and data integration.

How to apply:
We encourage candidates of all backgrounds and experiences to apply. Send the following to tgallo@umd.edu with "Human-Deer Postdoc" in the Subject header: 1) Letter of interest including your perspective on justice, equity, diversity, and inclusion in wildlife/ecological sciences, 2) CV, and 3) contact info for 3 references in a SINGLE PDF titled with your name (e.g., DoeJohn.doc or SmithJane.pdf).

Apply by October 30th for full consideration, though the position will remain open until a suitable candidate is found.