

Postdoctoral researcher position in quantitative population and community ecology

Dr. Daniel Reuman of the University of Kansas Department of Ecology and Evolutionary Biology and the Kansas Biological Survey seeks to recruit a postdoctoral researcher. The position is primarily part of a 3-year NSF-funded research project focused on the widespread ecological phenomenon of synchrony, the tendency for populations to rise and fall in unison.

In many hierarchical dynamical systems, “synchrony” between multiple fluctuating variables, i.e. correlations between variables through time, is more important than the individual variables themselves. For instance, the electrical grid may crash only when demands of multiple users become synchronized, producing total-usage spikes. Ecosystems can show this type of dependency on synchrony. Ecosystems include multiple trophic levels, with population signals from lower levels often being spatially or taxonomically aggregated to affect higher levels or humans. For instance, a predator is only harmed if its prey are scarce over its whole hunting area. For systems of this type, it is primarily the synchronous components of signals that matter in the average signal that affects the next level – non-synchronous components tend to cancel in the average. Thus synchrony is very important to ecosystems. Synchrony is found in organisms as diverse as mammals and protists, at distances up to thousands of kilometers and, very commonly, across taxa within communities. Synchrony is a crucial phenomenon for diverse research topics of central importance in ecology, including questions of diversity and ecosystem stability and ecosystem functioning; conservation; and resource and pest/disease management.

The position will initially focus on analyzing, as an excellent model system, several multi-decadal, large-scale ecological and oceanographic datasets related to California giant kelp forests and sandy beach ecosystems, including those from biodiversity monitoring programs and remote sensing products. The NSF-funded kelp research team that the successful candidate will join is a collaboration of remote sensing specialists; coastal marine biologists; and quantitative population and community ecologists who have been at the forefront of statistical methods development for studies of synchrony and who are interested in central questions of spatio-temporal and community population dynamics. The successful candidate will develop their own research projects in the context of becoming an integral part of this team. The successful candidate may also become involved in analyses of other model systems and theoretical approaches. Supplementary funding from the McDonnell Foundation and the California Department of Fish and Wildlife may also support the position. Salary range expected to be about \$47,500-60,000.

The University of Kansas (KU) is a major research university with special strength in ecology and evolutionary biology. The EEB department has ~40 permanent faculty working in a wide variety of theoretical and empirical areas, with numerous additional researchers in affiliated units such as the Biodiversity Institute, the Kansas Biological Survey, the Geography and Atmospheric Sciences Department, the Kansas Applied Remote Sensing unit, and many others. KU is in Lawrence, Kansas, about 30 miles from Kansas City. Lawrence is a cosmopolitan university town with vibrant art, music, and sports scenes that has been ranked among the best college towns in the country for liveability.

QUALIFICATIONS: We seek individuals from ecological and possibly other related backgrounds with skills and demonstrable interests in the modelling and analysis of populations. Statistical and computational skills are important, as are excellent written and verbal communication skills, an ability to work in research teams, and a capacity to publish results. A PhD or ABD in a related field is required. We are especially interested in candidates who can contribute to the diversity of the community.

See [here](#) for further information about the Reuman lab and links to past publications. Email reuman@ku.edu with questions. A start date prior to autumn 2021 is preferred. To apply, please send a CV, a cover letter of up to two pages, the names and contact information of three references to reuman@ku.edu, or apply [here](#). Review begins March 24, position open until filled.