Functional data methods for wearable device data

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and online via Zoom (Link)
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In the last ten years, technological advances have made many activity- and physiology-monitoring wearable devices available for use in large-scale epidemiological studies. This trend is likely to continue and even expand as devices become cheaper and more reliable. These developments open up a tremendous opportunity for clinical and public health researchers to collect critical data at an unprecedented level of detail, while posing new challenges for statistical analysis of rich, complex data. This talk will present a collection of approaches in functional data analysis for identifying and interpreting variability in activity trajectories within and across participants, for building regression models in which activity trajectories are the response, and for understanding shifts in the circadian rhythms that underly the timing of activity. We'll draw on several applications, including the Baltimore Longitudinal Study of Aging and data collected through the Columbia Center for Children's Environmental Health.

Biography:
Dr. Jeff Goldsmith is an associate professor in Biostatistics at the Columbia University Mailman School of Public Health. His work advances the state-of-the-art in functional data analysis by developing methods for understanding patterns in large, complex datasets in neuroscience, physical activity monitoring, and other areas.