Why is this study important? A good night's sleep is essential for our normal functioning. Disturbed sleep patterns make us more sick and shorten our life. The individual behaviours that have a big impact on sleep quality, e.g. alcohol consumption or physical activity, are known to be difficult to modify for individuals let alone policy makers. The effects of the environment on an individual's sleep are small by comparison but have a noticeable impact on the healthcare system when we consider the entire population. Factors of the urban environment, on which individuals have next to no influence, are comparatively easy to change via public policy. Creating more parks and planting more trees and reducing pollution levels will benefit everybody no matter who they are and what lifestyles they have.

Why another study? The many harmful and the few beneficial physical factors of the urban environment are not independent. For example, where there is more road traffic there will not only be more air pollution but also more noise. Yet only a small minority of the thousands of published studies that investigated the effects of the environment on health looked at the effects of several environmental factors *simultaneously*. The goal of the proposed Nature, Pollution, and Sleep (NaPS) study is to improve on existing studies by (a) considering more urban environmental factors than previous studies and (b) using advanced statistical methods to identify the role and relative importance of each factor in their relation to sleep in Polish urban residents. We expect that nature improves sleep by reducing exposure to noise, air pollution, heat, and artificial light at night. We further expect that vulnerable populations, that is, persons with low socioeconomic status, of older age, or poor health and wellbeing states, benefit the most from more nature.

What will we do? The NaPS study will recruit 2170 adults, aged 18 to 60 years, that will be randomly selected from four major Polish cities—Warsaw, Krakow, Łódź, and Wrocław. We will measure different aspects of sleep, including duration, quality, and sleep problems via questionnaire and wrist-worn devices. Home addresses will be converted to X and Y coordinates and used to calculate the amount of nature (vegetation degree, tree and grass cover, presence of urban green spaces) and pollution levels (noise, air pollution, heat, artificial light at night) using publicly available data. Searching the scientific literature and drawing a picture of all relevant factors, environmental or not, showed that individual behaviours (physical activity, screen time, substance use), health and wellbeing states (diseases, depression/anxiety, stress), and sociodemographic factors will all have to be taken into account to get the full picture. The complex interrelations between nature, pollution, and sleep will be analysed with sophisticated, up-to-date statistical methods. Before finalising the details of the study and starting to collect data, we will review and summarise previous research on environment and sleep and publish our report for use by others.

Why Poland? Poland, where urban residents have limited access to nature but, at the same time, are exposed to high levels of environmental pollution, provides a good stage for this kind of research. The results will be spread to exchange knowledge with the scientific community, inform city planners and policy makers, educate the general public, and ensure that gained knowledge, results, and project output can be reused by other scientists and in future studies, such as in a follow-up of study participants or when creating new studies. I want to believe that communicating our findings and sharing byproducts of our work will not only contribute to environment and sleep research but will also help the fields of environmental epidemiology and environmental psychology to grow in Poland.