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<b>Head:</b>	Prof. Dr. Eva Heinen
<b>Topic:</b>	Maximising the health and wellbeing benefits of active mobility
<b>Assistant:</b>	Malithi Fernando
<b>Registration:</b>	<a href="http://www.ivt.ethz.ch/en/studies/downloads/assignments.html#registration">www.ivt.ethz.ch/en/studies/downloads/assignments.html#registration</a>

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Decisions to walk or cycle in cities can be influenced by active mobility infrastructure, urban design elements and street furniture, trees and greenery, low pollution levels, street-level commerce, perceived safety, and other factors that contribute to liveable urban environments. Active mobility has been linked to better physical and mental health and greater wellbeing, especially when undertaken in pleasant urban settings where users feel comfortable and safe. However, these areas are not always equitably accessible to all residents. Healthier urban environments have been found to be present in neighbourhoods of higher socioeconomic advantage, while neighbourhoods of lower socioeconomic advantage have been shown to have lower air quality, less tree cover, etc.

This project aims to build an understanding of the health and wellbeing impacts of active mobility and the conditions needed to maximise these positive outcomes for all residents. It includes an analytical component, characterising active mobility routes in Zurich (or a city of choice) based on an index incorporating elements contributing to health and wellbeing. Additionally, the project will analyse how equitably these areas are spatially distributed and provide recommendations to increase access for all residents. The research can focus on cycling or walking, and/or on specific demographics or priority areas such as healthy aging, children's mobility, mental and/or physical health, or climate adaptation (eg. dealing with higher temperatures).

Tasks/research questions:

- *Which elements of the urban environment encourage active mobility and contribute positively to health and wellbeing?*  
Conduct a **review of existing literature** on active mobility and urban design related to health and well-being.
  - *Which routes/areas in Zurich contribute to improving health and wellbeing of residents?*  
Develop a **composite health and wellbeing index** to characterise areas or routes in Zurich based on the findings of the literature review and available data. Possible datasets include transport networks, active mobility infrastructure, tree cover, land use/commercial areas, vehicle speeds, traffic volumes, crash data, street lighting, street furniture, walk scores, etc. Various data sources may be used including the Zurich Open Data portal and Open Street Maps.
  - *Are these areas/routes equitably distributed so all residents benefit?*  
Analyse the **spatial distribution of these routes/areas in conjunction with socioeconomic data** to determine whether all socioeconomic groups have equitable access to health-promoting urban environments. Census data should be used for socioeconomic variables. Methodology to be discussed.
  - **Conclusions and recommendations**
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## IVT – Assignments

Reflect on the implications of the findings for urban planning and policies. Make recommendations to the city on where to focus improvements to maximise health and wellbeing and ensure equitable access (ie. where are the low-hanging fruit where small changes could yield significant results?)

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**Links:**

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**Additional remarks:** Prior spatial analysis skills in GIS or R/Python would be an asset. Prior experience with data and statistical analysis is recommended.

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**Minimum credits:** Topic suitable for MSc or BSc thesis, credits depend on the study program

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**Recommended lectures:** Transport Planning Methods  
GIS