## University of Waterloo GEMM Initiative

### Measuring Localized Heat and Air Quality in the City of Kitchener

#### 4/17/2025

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## Agenda

- GEMM Initiative at the University of Waterloo
- GEMM Collaborations with the City of Kitchener
- Measuring Localized Heat and Air Quality
- Questions / Discussion



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## **GEMM Initiative at the University of Waterloo**

Addressing Technology and Data Gaps in Environmental Measurement & Monitoring

#### Research Collaborations



Interdisciplinary collaborations across faculties and institutions

#### Student Opportunities



Education and research opportunities for students to engage in GEMM topics

#### Technology Development



Advancing technology and data science for environmental measurement

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#### Monitoring Applications



Creating & expanding environmental monitoring networks



## How Could the City of Kitchener Collaborate with GEMM?

#### Data Challenges



Work together to identify gaps and challenges measuring environmental parameters.

#### **Environmental Monitoring**



Create or expand environmental monitoring networks and open data sources.

#### **Research Collaborations**



Engage in collaborative research programs that advance environmental measurement and monitoring data.



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## **Measuring Localized Heat and Air Quality**

- Climate change has significantly increased exposure to heatwaves and air pollution, with associated health risks.
- Current data comes from traditional, expensive weather and air quality stations.
- The Crankyweather Lab will use mobile and stationary sensors, along with computational models, to inform our understanding of extreme heat, air quality, and heath in the city.
- Benefits of collaborating with UW:
  - Open-source data for policy development, data baselines, and community engagement.
  - Project and data management through UW.
  - A cost-effective way to expand environmental monitoring in Kitchener.



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## **Questions / Discussion**

- Where does the City of Kitchener have gaps in environmental data?
- How can UW streamline research collaborations with the City of Kitchener?
- Can we start now to deploy sensors that will create a baseline for localized heat and air quality data?





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Our greatest impact happens together.