

THIS IS NOT A FAD!

THE HEALTH GEOGRAPHY



THE MAGNIFICENT COMBINATION

The Health Geography is a combination of:
GEOGRAPHY
with
MEDICINE

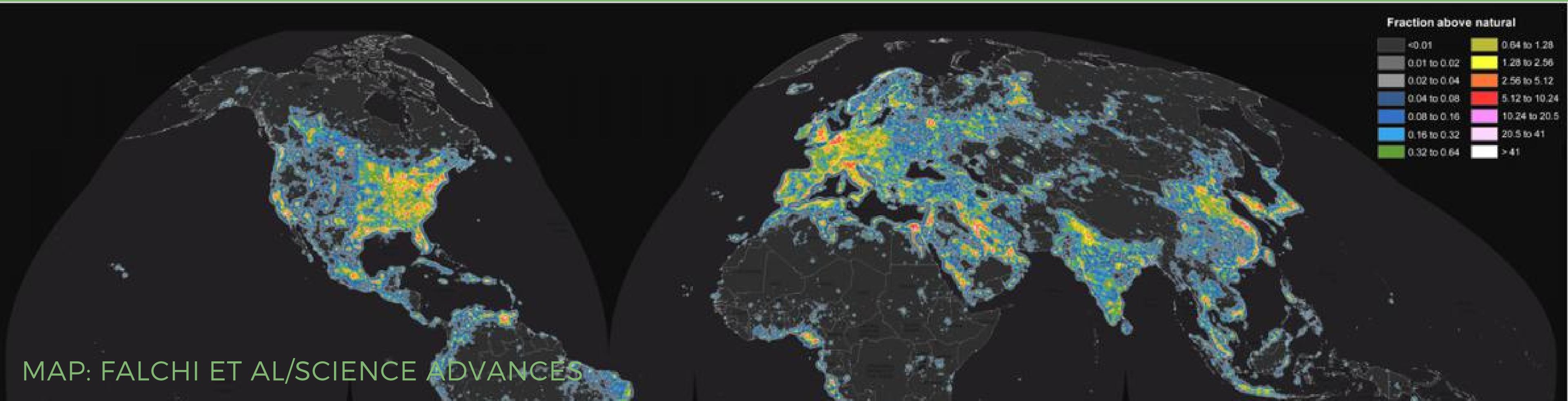


CREATE A MAP

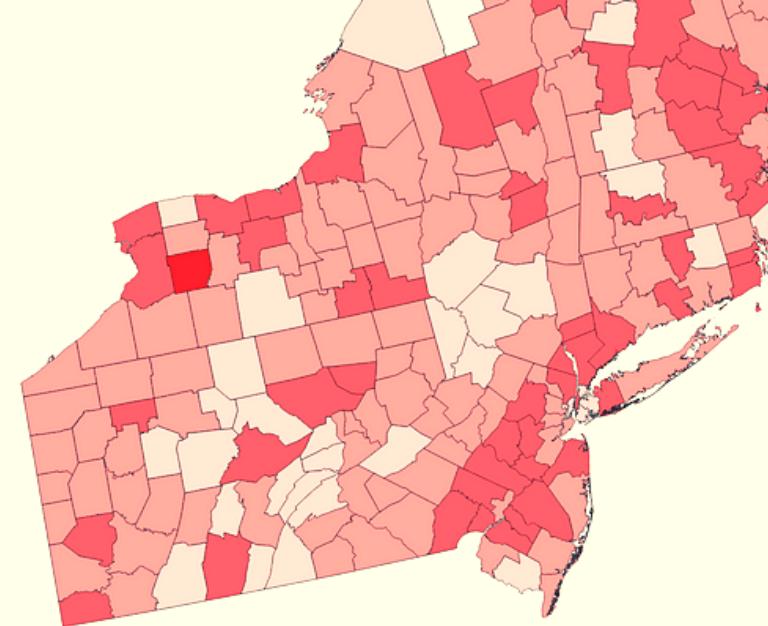
MAPS ARE THE BEST DATA
VISUALIZATION TOOLS FOR THE PUBLIC
HEALTH DATA

What to present in a map?

- air pollution linked to the respiratory diseases
- carcinogens
- disease rates per administrative unit
- vector distribution and density
- light pollution linked to the insomnia and cancer induced by lower melatonin levels
- crop diseases, forest diseases, animal diseases...



MAP: FALCHI ET AL/SCIENCE ADVANCES



MAP => YOU KNOW WHERE #1 DECISION MAKING

HELP PEOPLE

Find areas where infections / cases per population are too high and do something with it



PROTECT WEALTH

Prepare yourself and your family. Prepare your crops, your animals and at the large scale - your market!



FIND HIDDEN PATTERNS

Link the disease agents distribution with the infections. Find the correlation and the causation.



EXPLORE A NETWORK

NETWORKS ARE EVERYWHERE AND VIRUSES, BACTERIA AND PARASITES ARE USING THEM TOO

Why networks?

- where people go there viruses go too,
- we can predict flow of a disease,
- we could model infections at the very small scale...
- ... or at the very big scale, a network may describe a hierarchical structure better than the fixed-resolution map,
- networks are dynamic.



NETWORK - YOU KNOW WHERE #2 ANALYTICS



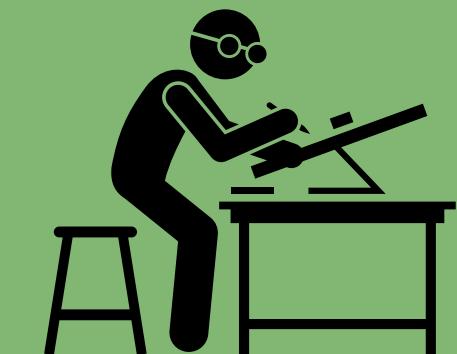
TRACK TRANSMISSION

Predict where disease will
hit next



MODEL TRANSMISSION

Test different disease
spreading scenarios in a
laboratory

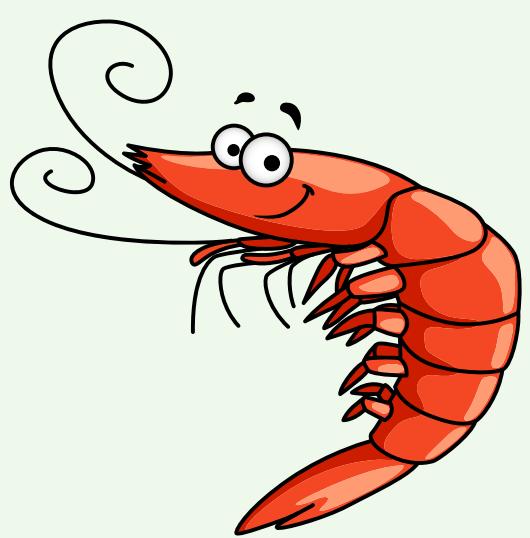


PREVENT

Find transmission routes
and cut them



THE HEALTH GEOGRAPHY PROBLEMS OF TODAY (SUBJECTIVE SELECTION)



Drugs in the
Wastewater

Opioid Crisis



Airborne Crop
Pathogens

Air Pollution



WoW
Corrupted
Blood Incident



Climate Change Driven
Diseases:

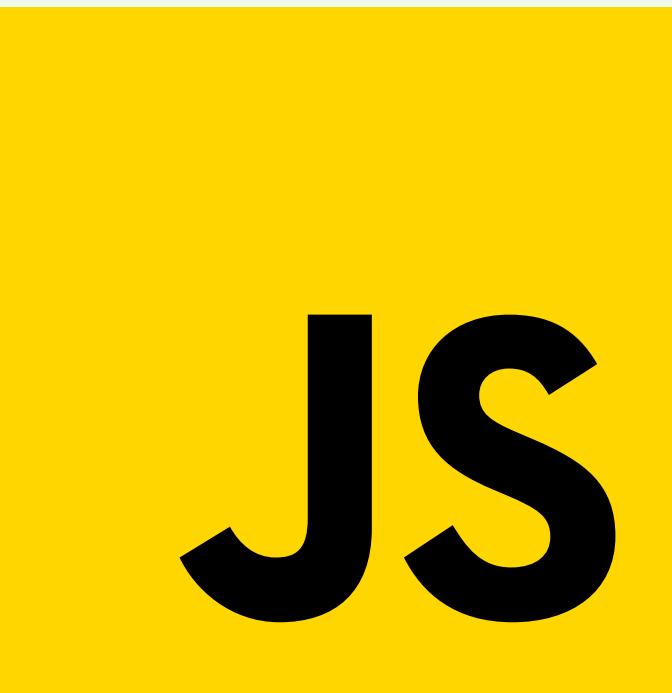
- vectors distribution,
- migration,
- extreme events.



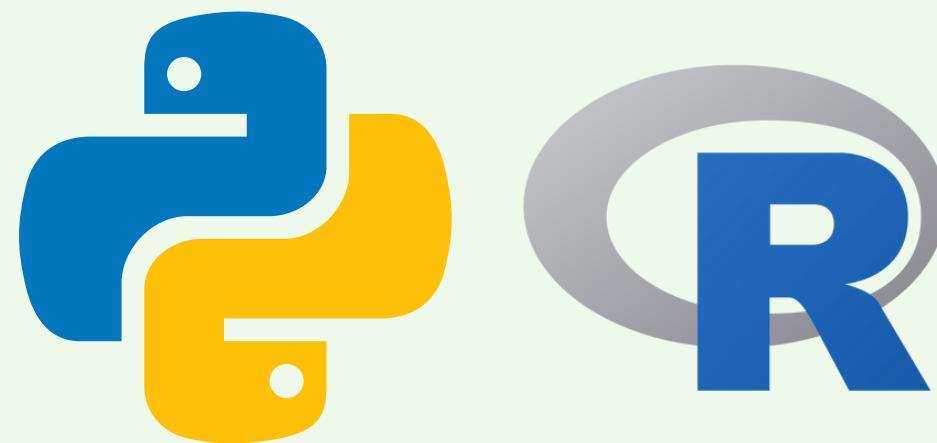
Farm Animal
Diseases

Antibiotic
Resistance

THE HEALTH GEOGRAPHY FROM DEVELOPER PERSPECTIVE



JavaScript Leaflet and D3 for
the Data Visualization



Python / R packages for the
Data Analysis



C / C++ / Go / Rust for the Data
Streaming



BONUS: THE HEALTH GEOGRAPHY OF THE FUTURE

PLANETARY PROTECTION...
LONG PERIODS OF ISOLATION...



THANK YOU!

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