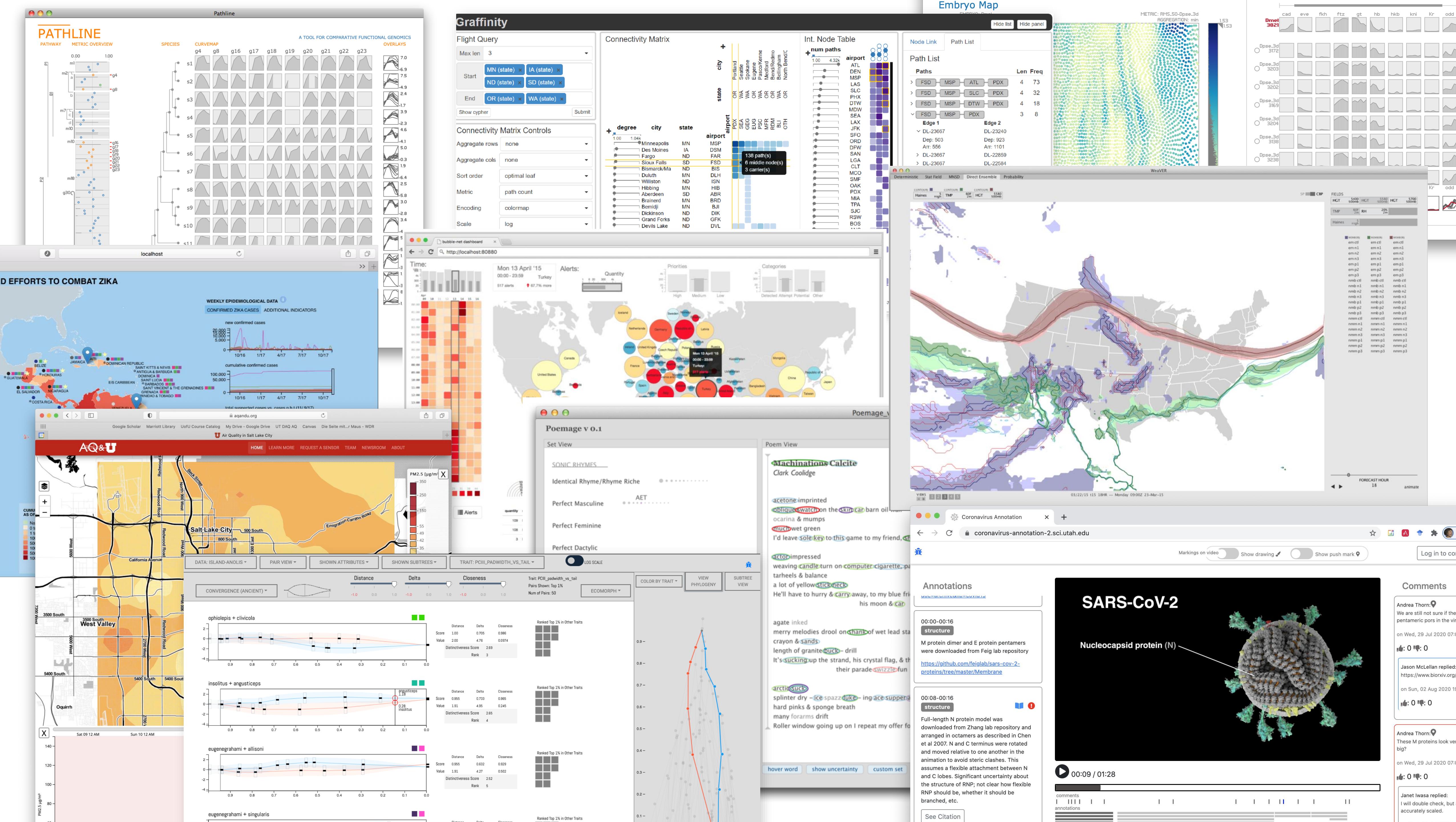


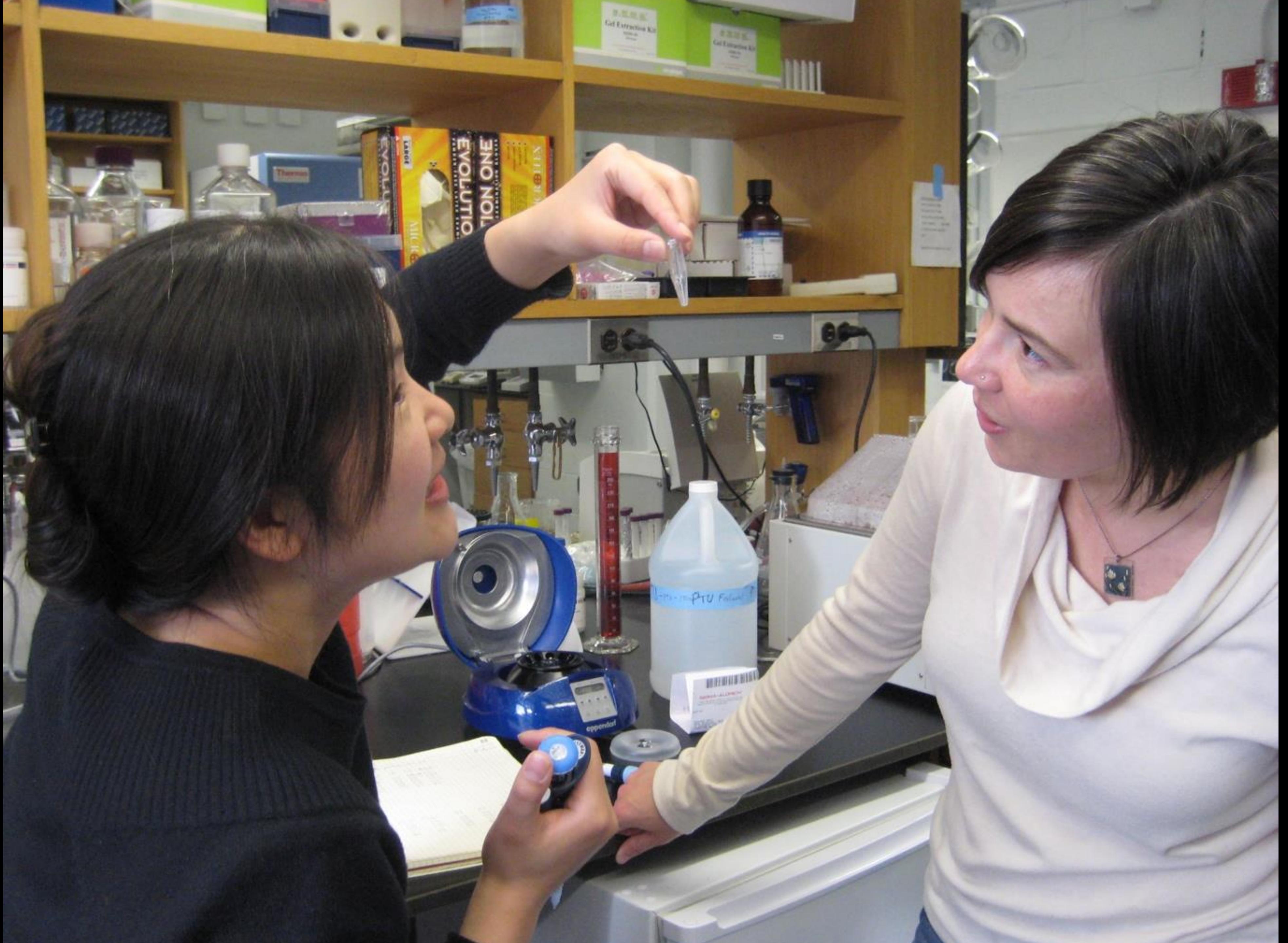
HUMAN-CENTERED VISUAL ANALYSIS

Miriah Meyer

*Professor
Linköping University*



methodology: design study



application areas: many

biology

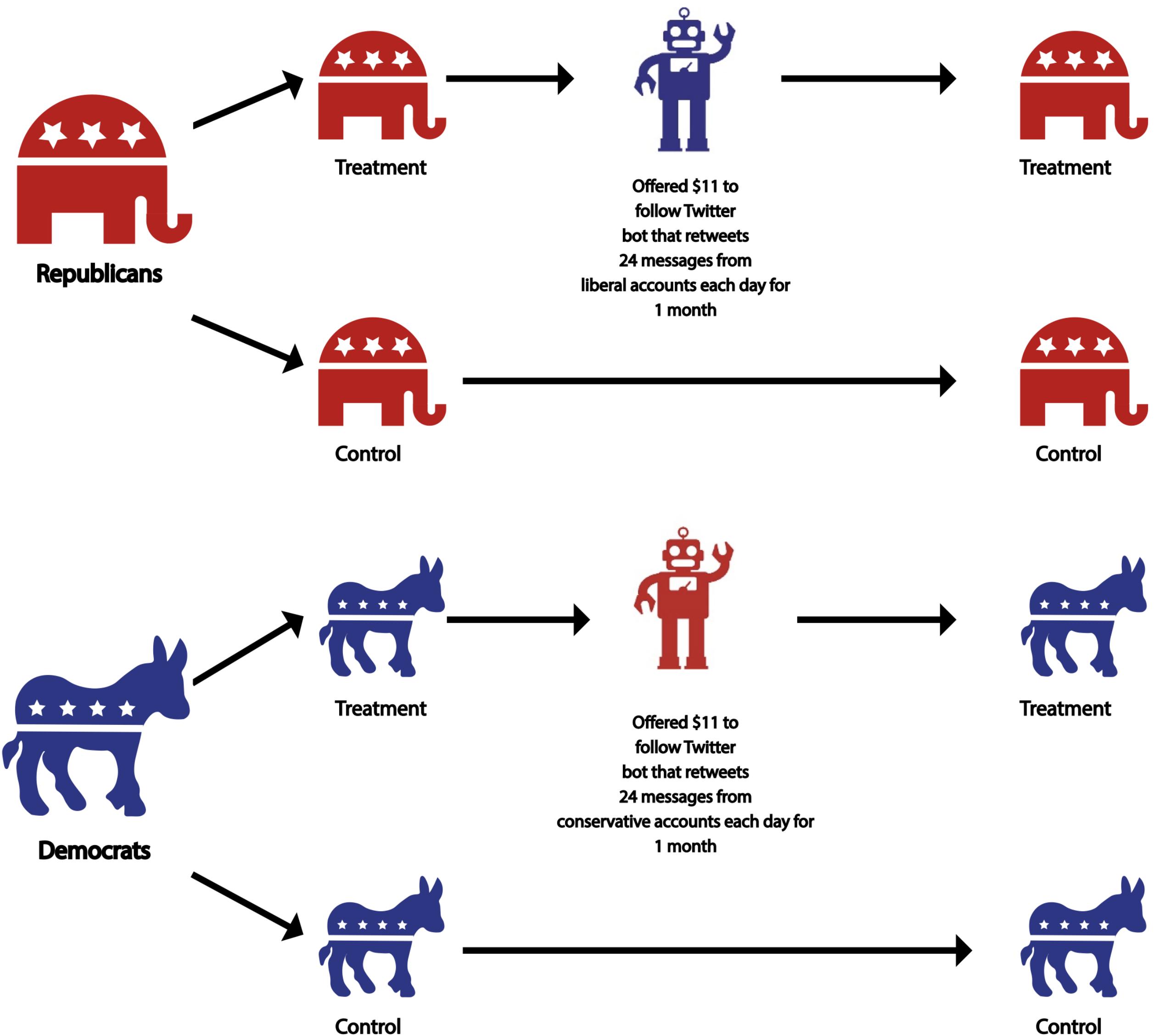




public health

meteorology





social science

digital humanities

Emily Dickinson (#315)

God now attack - *desire*

He tumbles at your Soul
As Players at the Keys
Before they drop full Music on —
He stuns you by degrees

Prepares your brittle Nature
For the Ethereal Blow
By fainter Hammers — further heard —
Then nearer — Then so slow

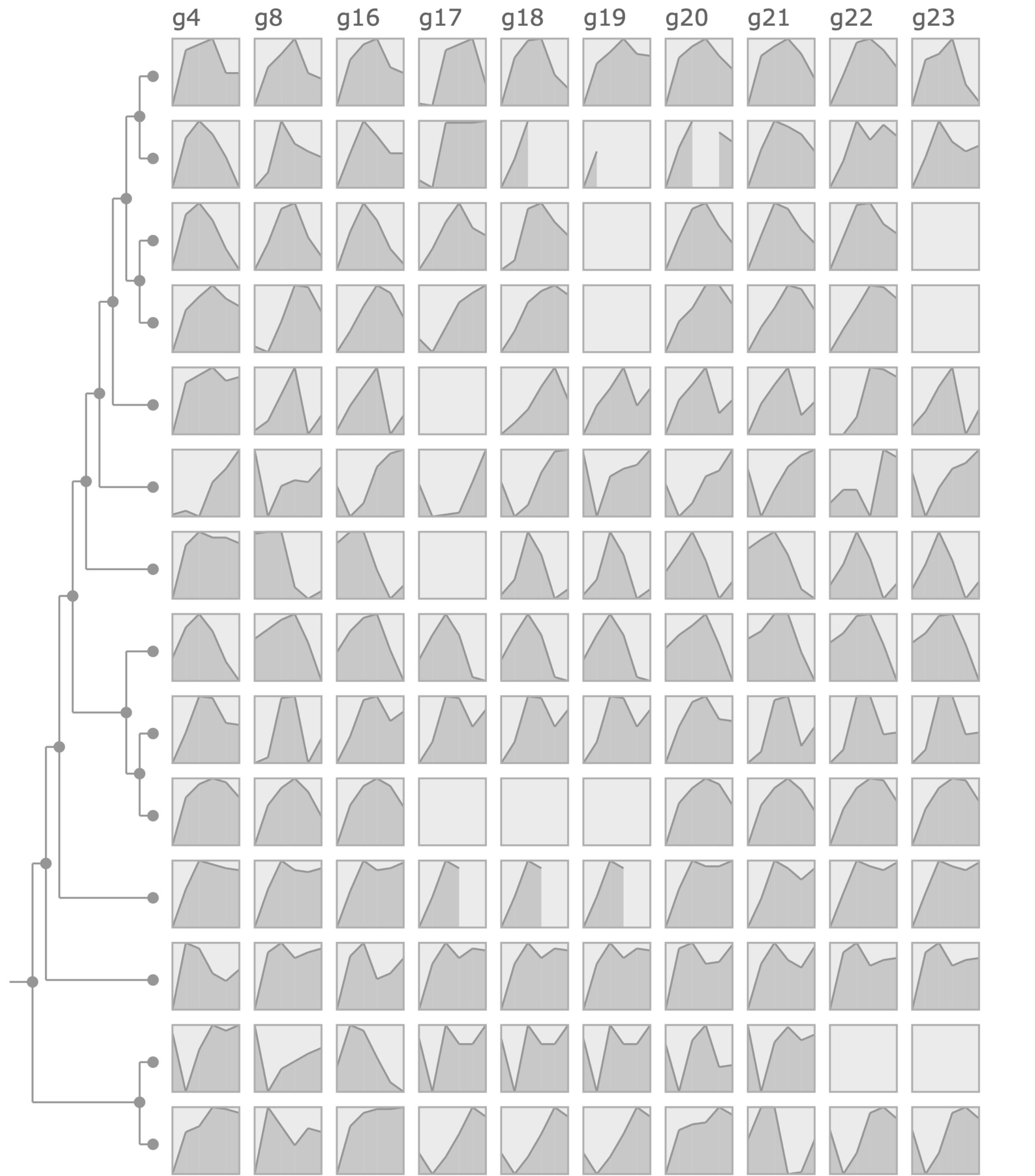
Your Breath has time to straighten —
Your Brain — to bubble Cool
Deals — One Imperial Thunderbolt
That scalps your naked Soul

When Winds take Forests in the Raws —
The Universe — is still

] Pause

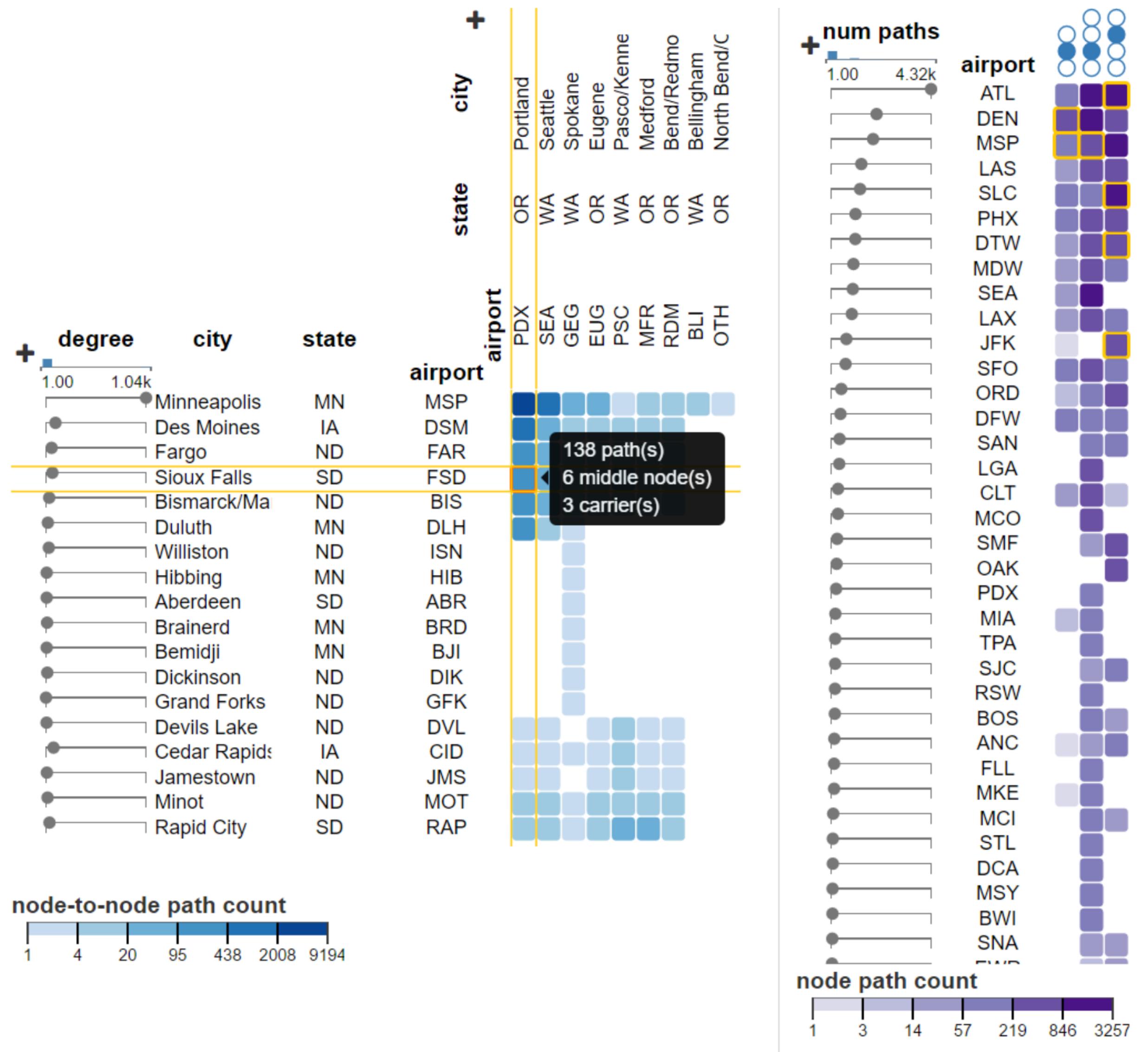
what do we learn?

results: new visual analysis techniques



curve map

Pathline: A Tool for Comparative Functional Genomics.
M. Meyer, B. Wong, M. Styczynski, T. Munzner, H. Pfister, CGF (EuroVis), 2010.



connectivity matrix

Graffinity: Visualizing Connectivity in Large Graphs.
E. Kerzner, A. Lex, C. Sigulinsky, T. Urness, B. Jones, R. Marc, M. Meyer, CGF (EuroVis), 2017.

Night

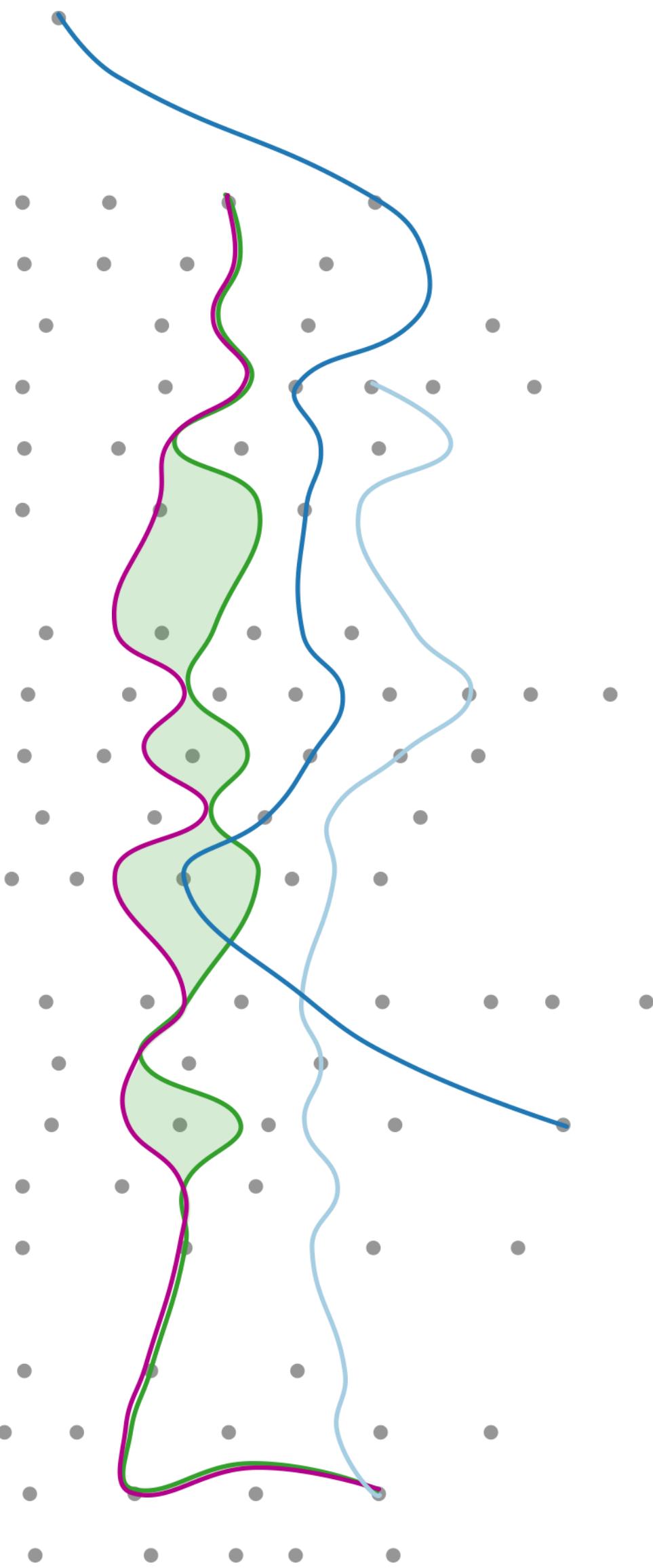
Louise Bogan

The cold remote islands
And the blue estuaries
Where what breathes, breathes
The restless wind of the inlets,
And what drinks, drinks
The incoming tide;

Where shell and weed
Wait upon the salt wash of the sea,
And the clear nights of stars
Swing their lights westward
To set behind the land;

Where the pulse clinging to the rocks
Renews itself forever;
Where, again on cloudless nights,
The water reflects
The firmament's partial setting;

-O remember o'er
In your narrowing dark hours
That more things move
Than blood in the heart.



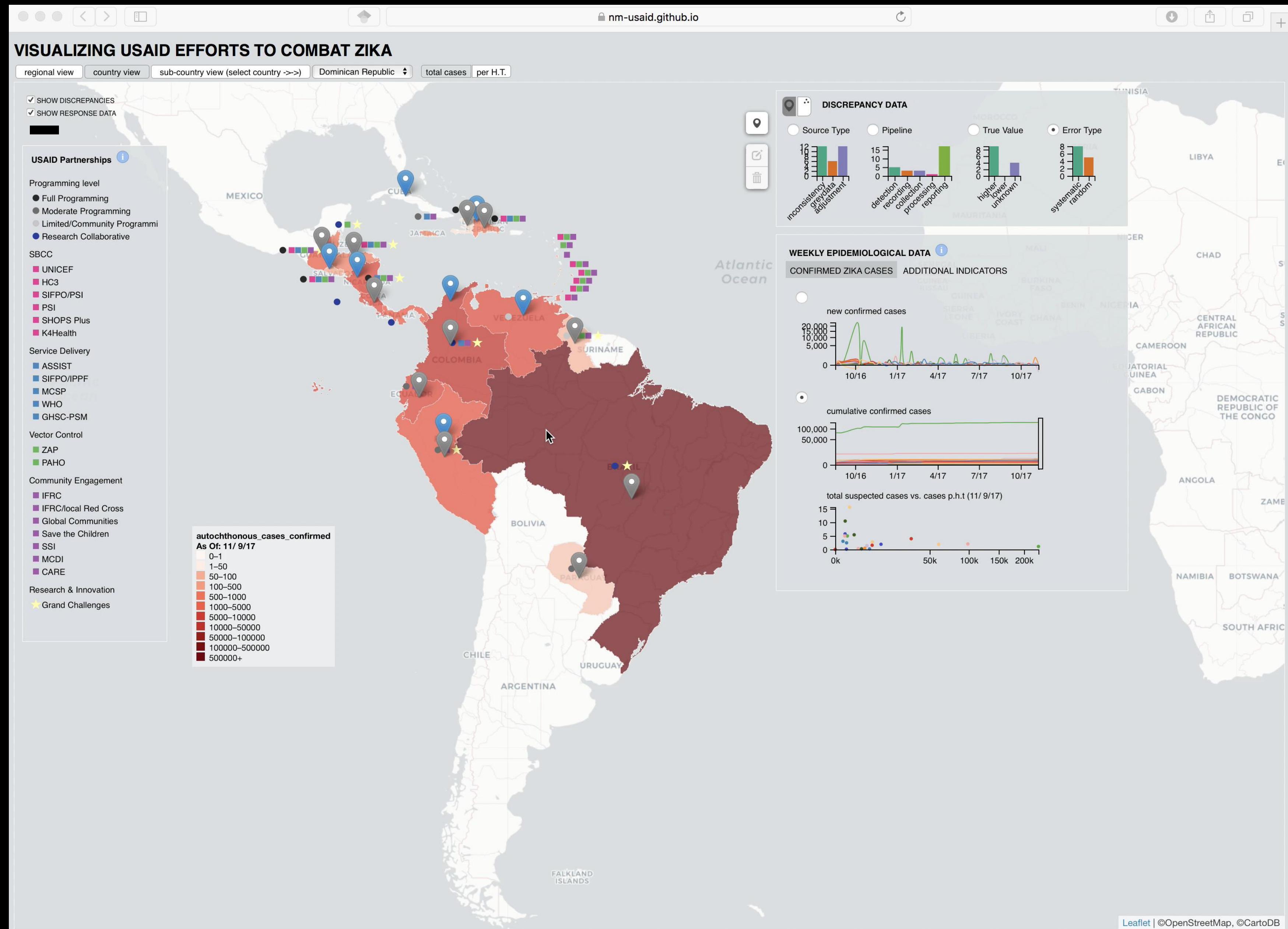
topology of sound

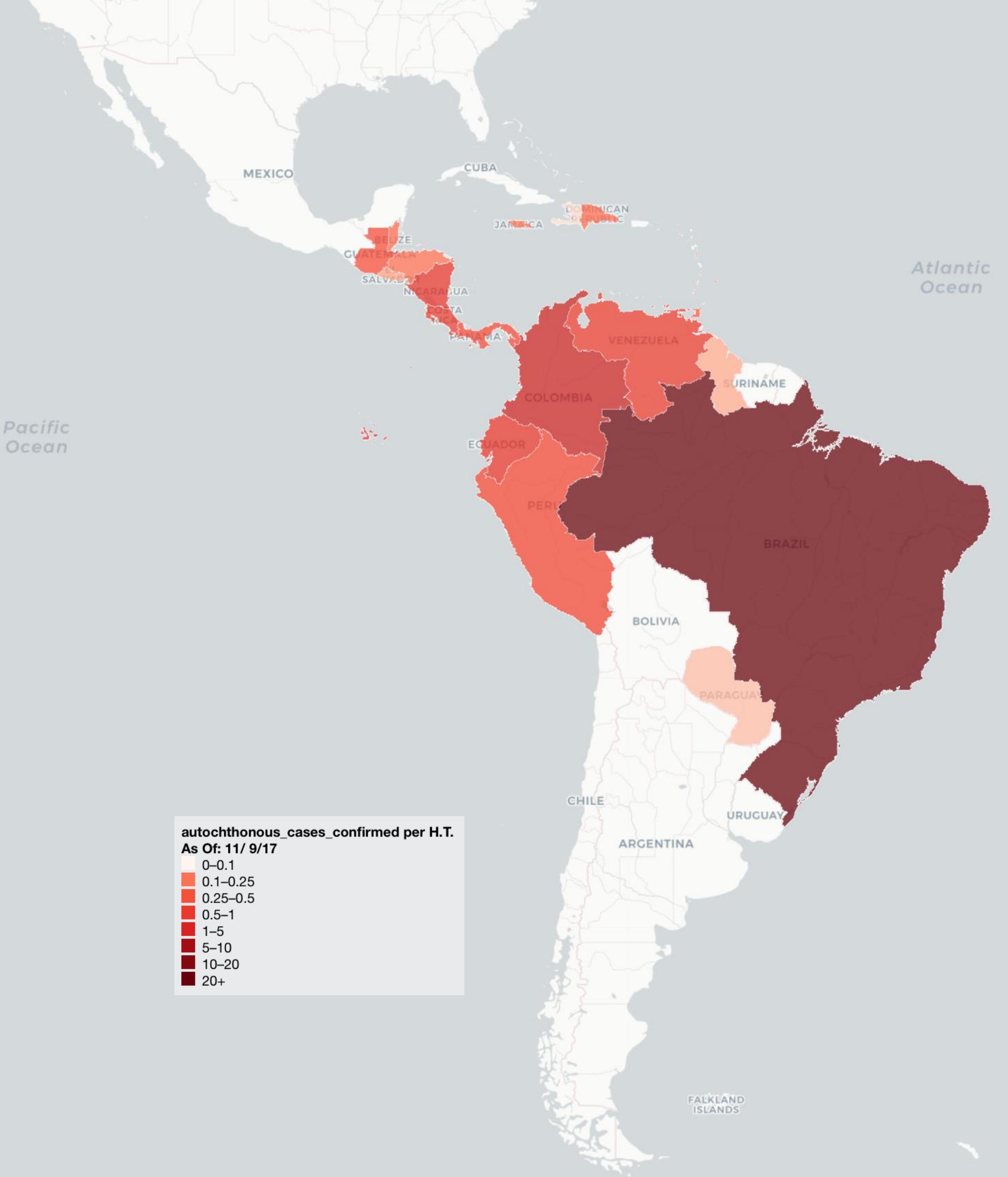
Poemage: Visualizing the Sonic Topology of a Poem
N. McCurdy, J. Lein, K. Coles, M. Meyer, IEEE TVCG (InfoVis), 2016.

results: people + data



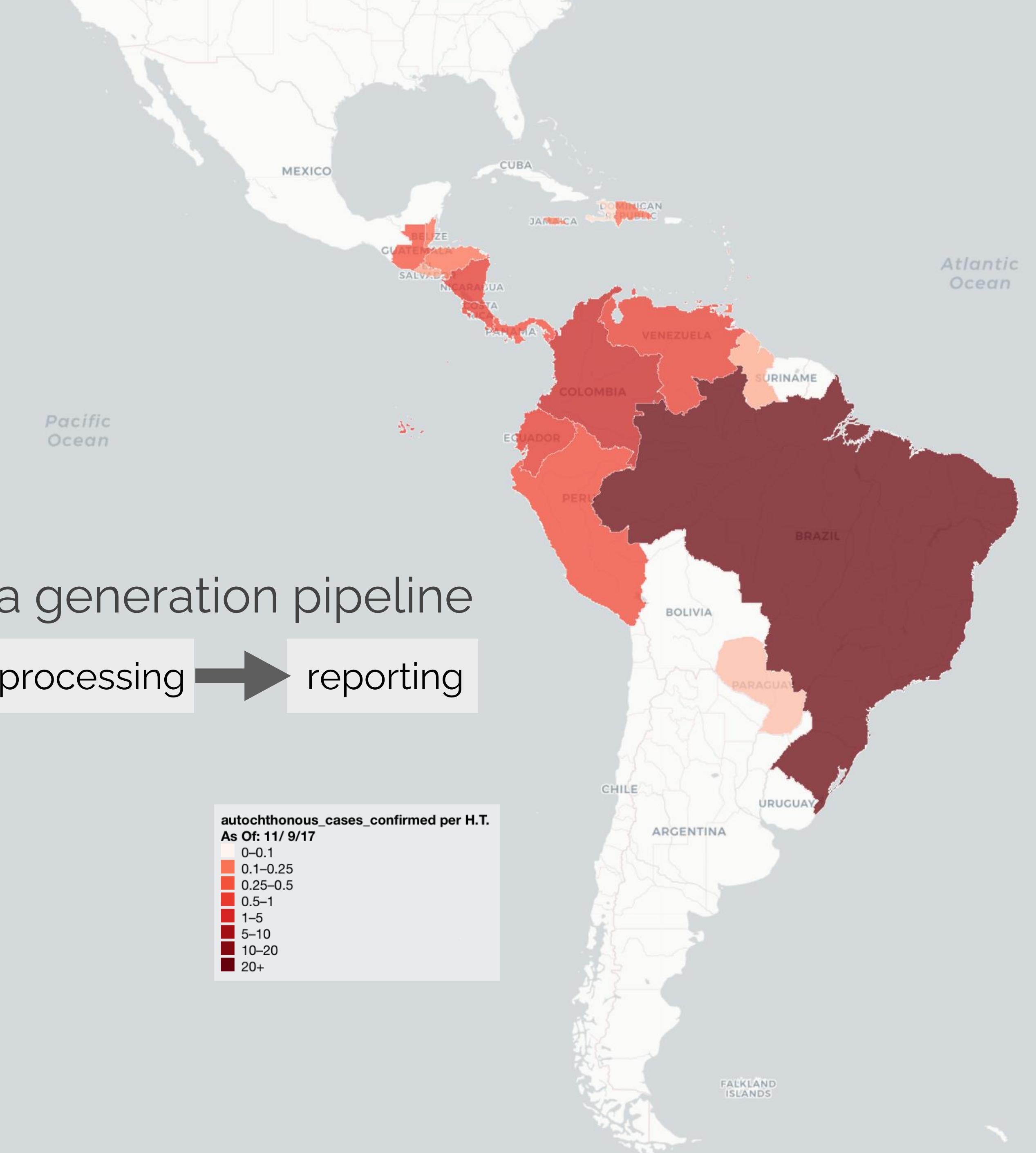
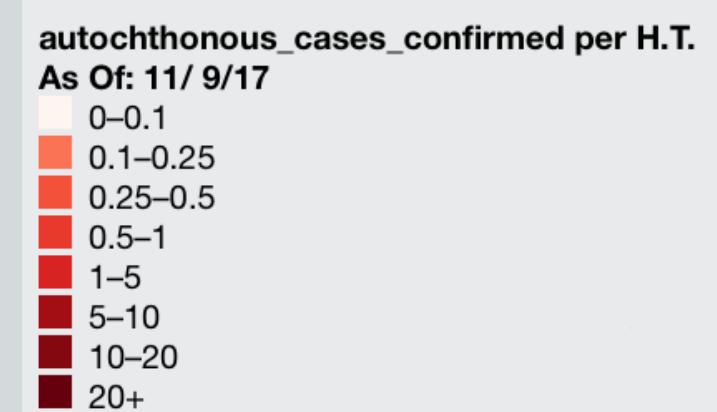
global health





distributed, heterogeneous data generation pipeline

detection → recording → collection → processing → reporting



implicit error

Flag Error
knowledge of errors will vary, please fill out the following to the best of your knowledge.

Region: [anonymized]

Description:
no cases confirmed -- need to ask [local Zika advisor in Country X] how PAHO does surveillance of confirmed (lab) vs. suspected. I imagine it has to do with what the Ministry chooses to count as a case

Which indicator(s) does this error impact?

- all
- cumulative confirmed cases
- autochthonous cases confirmed
- autochthonous cases suspected
- confirmed congenital syndrome
- death among zika cases
- imported cases
- incidence rate

Does the error seem systematic or random?
 systematic random unknown

Error type:

- errors due to inconsistencies in data acquisition or reporting across regions (e.g. indicator definitions), or to region-specific factors/events
- unofficial data/data omitted at some stage of the surveillance system (detection,recording, collection...etc)
- errors due to updates made retrospectively to data

Which stage(s) of the surveillance system does this error impact?

- detection recording collection processing
- reporting

Which epi report(s) does this error impact?

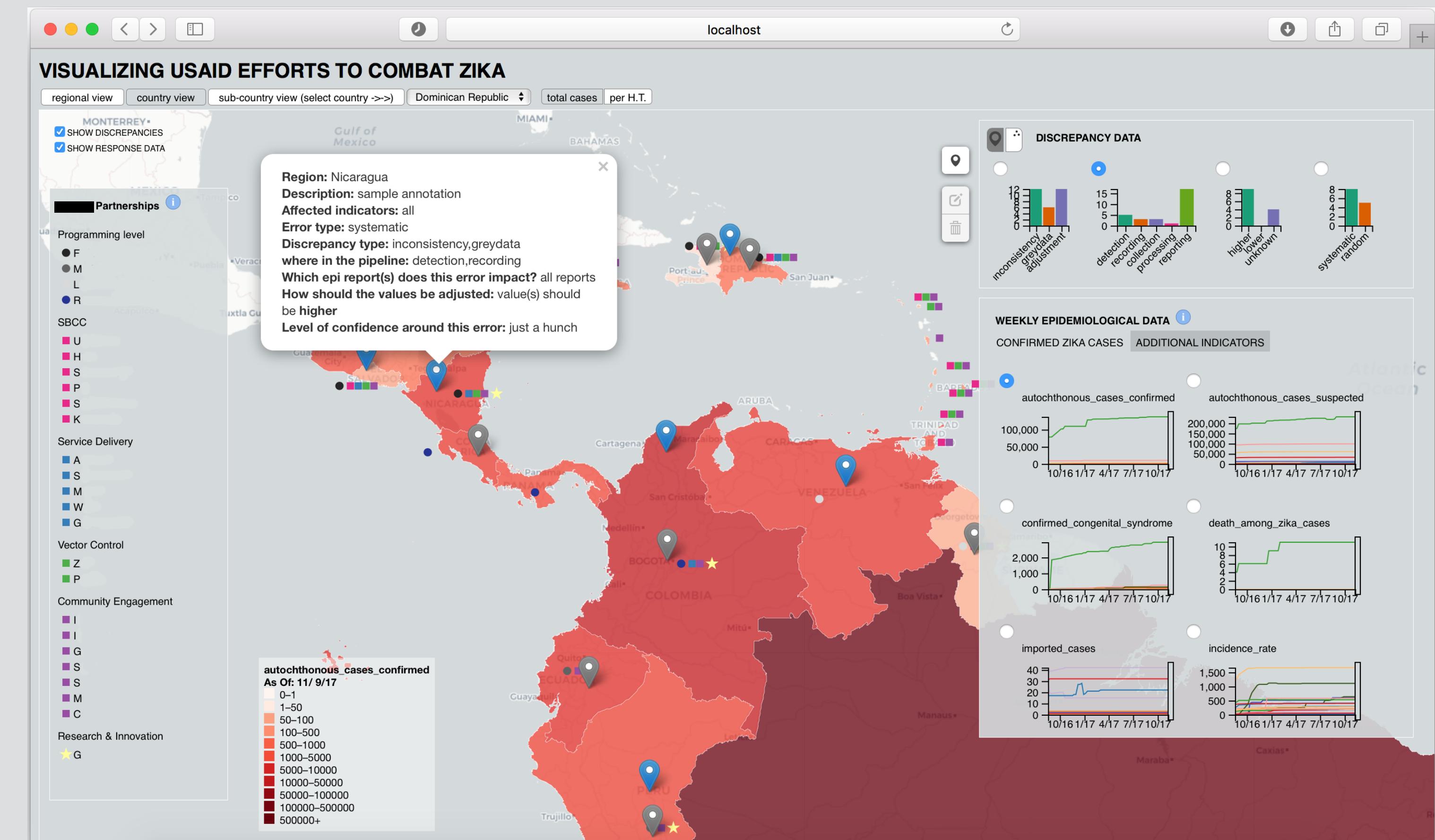
- all reports only the current report other

How would you adjust the official data to reflect this?
value(s) should be: higher lower unknown

How confident are you in the existence of this error?

- just a hunch
- fairly confident, but do not have all the details
- confident

Submit



data hunches



Data Hunches: Incorporating Personal Knowledge Into Visualizations.
H.Lin, D. Akbaba, M. Meyer, A. Lex, in progress.

future work:

- design for analysis that is messy, complex, and very very human
 - perspectives and methods from design, humanities, and social science
- design for the ways people actually analyze data
 - visualization design as a lens
- design for a more ethical, inclusive, and fair future
 - starting from acknowledgment that data and tech are not neutral

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