

Team Science: Metrics for Cooperativity

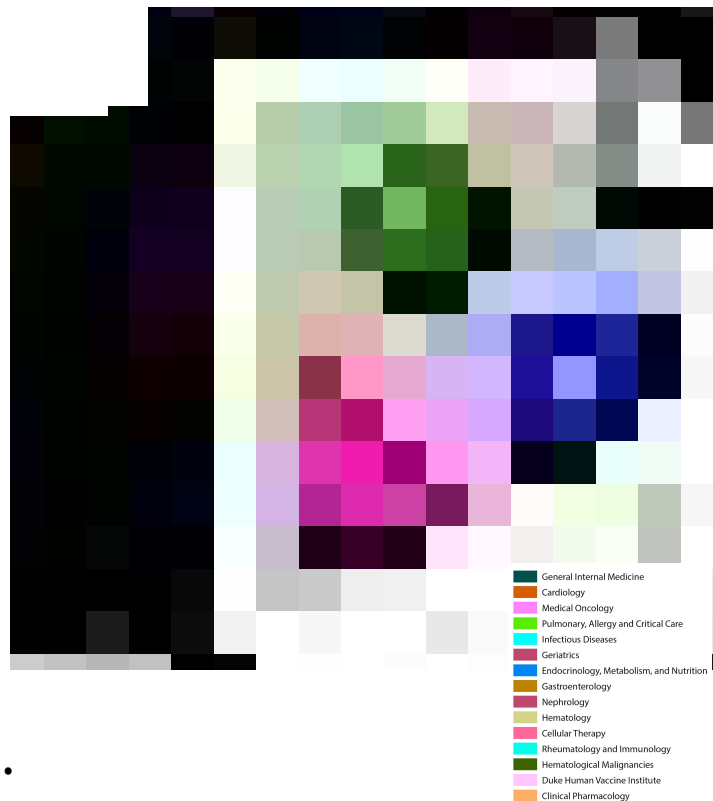
Anne Driscoll
Austin Ferguson
Mentor: Dan Coroian
Client: Duke CTSA

Created a metric to deconstruct cooperativity and productivity in the Duke Hospital.

Found that the best way to deconstruct such complex concepts was to create a linear combination of common collaborative measures, eg:

- % of papers which are collaborative
- # of departments collaborated with
- # of researchers collaborated with

Created a network of professor collaboration to analyze overall connectivity.

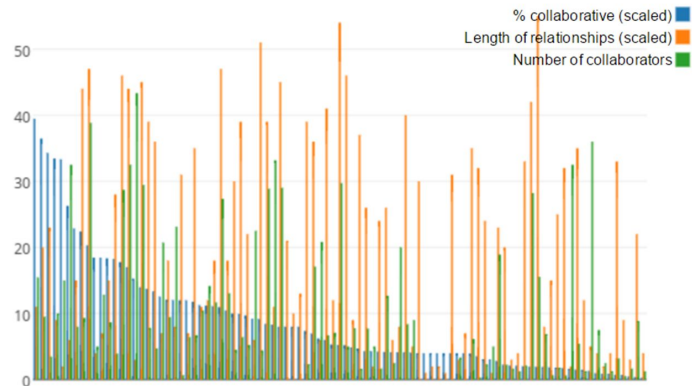


Team Science: Caveat on the Metric

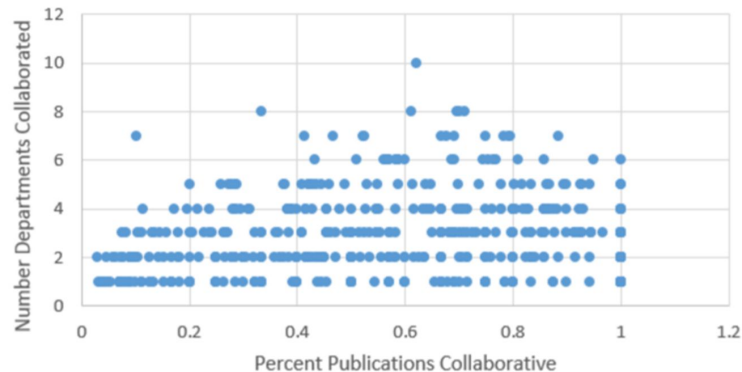
There was a disconnect in the scores in different metrics. People could score high in one, low in another, and mid-range in a third!

This challenges the notion that these factors all measure the same abstract notion of ‘collaborativity’

Executive decision will have to be made determining what CTSA values so as to assign weights to each part of the overall metric.



Comparison of Two Metrics



Team Science: Apps and Graph Theory

We created an app which will allow the CTSA to decide how they rank the various factors for collaborativity, and will then display a scatterplot of individuals' rankings in the two metrics

We also explored how graph theory concepts could be used to predict which connections will be most conducive to connecting the network as new collaboration is conducted.

