

Analysis of Team Science: Workshop Report on Airborne Transmission of Coronavirus

Sunethra Kannan, Min Cheong Kim, Laura (Jou) Lee, Jodi Schneider
 School of Information Sciences & Department of Philosophy, University of Illinois at Urbana-Champaign

I ILLINOIS
 School of Information Sciences

Introduction

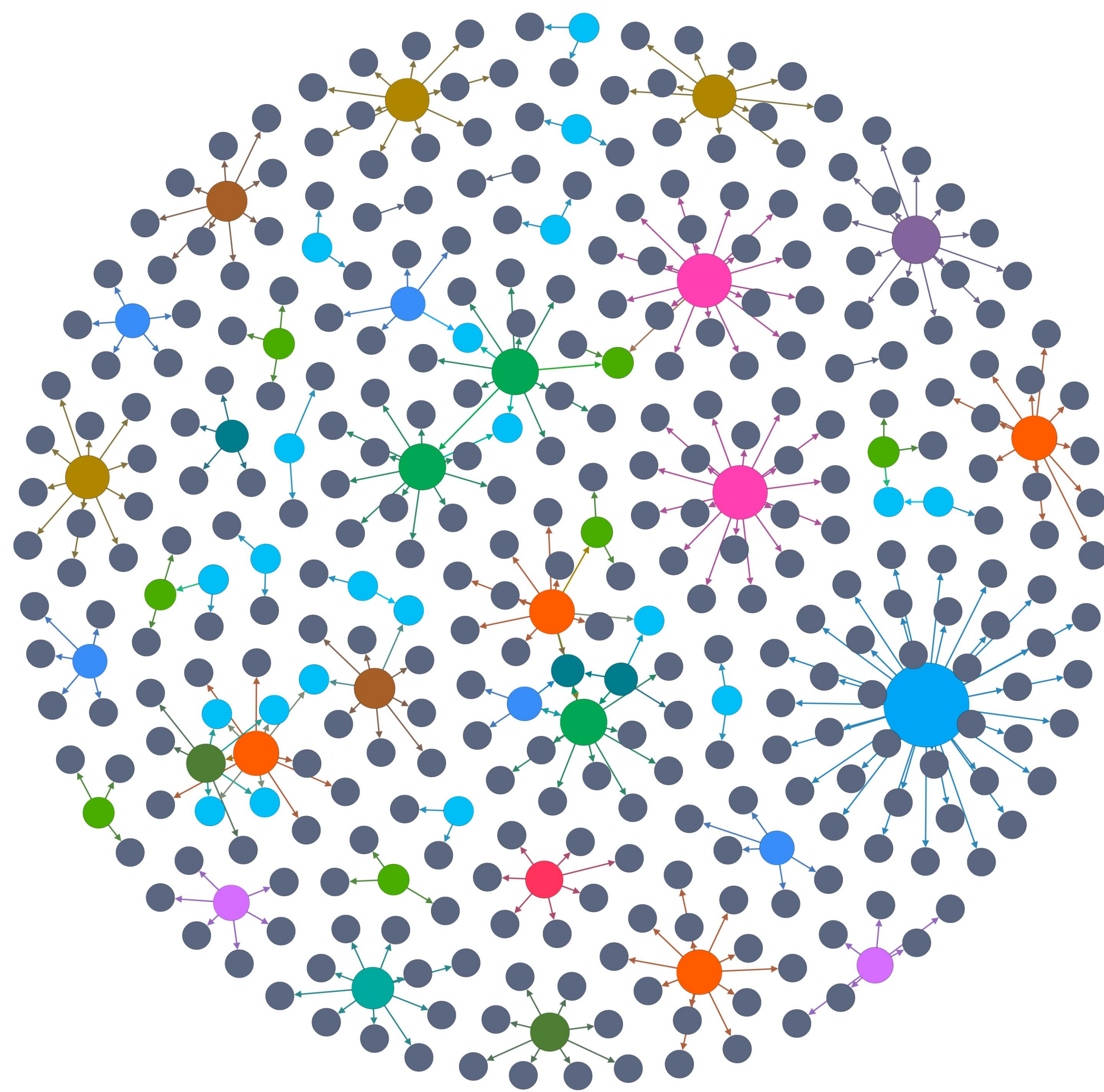
- Complex research questions need interdisciplinary cooperation to achieve the best scientific outcomes.
- Team Science: “collaborative effort to address a scientific challenge that leverages the strengths and expertise of professionals trained in different fields” (Southern CA CTSI).
- Goal: understand and analyze how information moves between different expert communities and facilitate better communication.

Methods

- Case study approach
- Created a timeline of events related to airborne transmission
- Investigated the August 2020 workshop report *National Academies report on the Airborne Transmission of SARS-CoV-2: Proceedings of a Workshop*
 - Mapped connections between co-authors of each cited reference

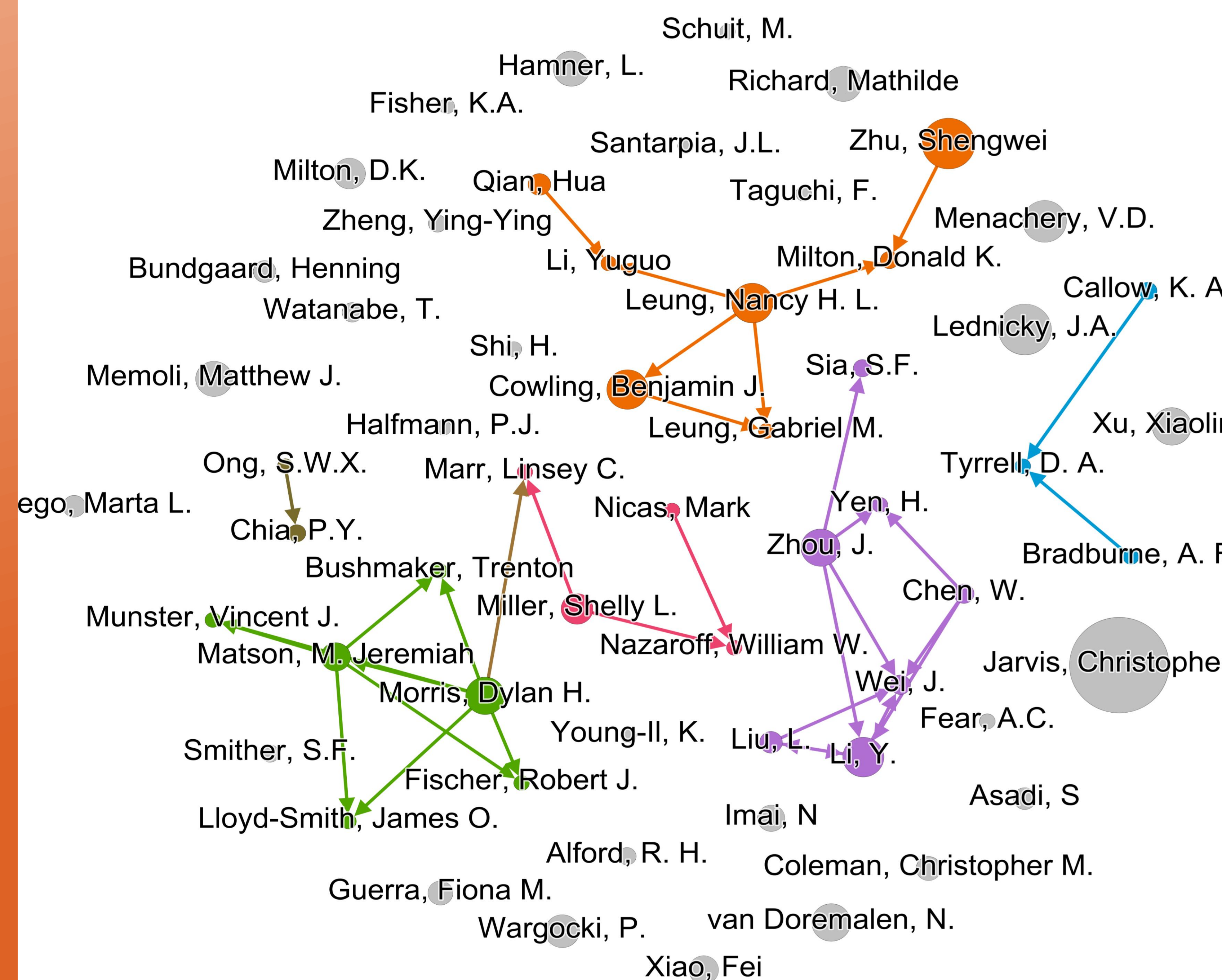
Timeline

January 9: WHO: Chinese authorities determined the outbreak is caused by a novel coronavirus.	March 27: CDC: transmission routes: respiratory droplets and contact	April 2: WHO: transmission from symptomatic and asymptomatic cases	April 6: WHO: even healthy people should wear masks	July 9: CDC: modes of transmission: contact, droplet, airborne, fomite, fecal-oral, bloodborne, mother-to-child, and animal-to-human	August 26–27: National Academies Workshop on airborne transmission
---	--	--	---	--	--



Co-authorship Network.

Large circles represent first authors, who are connected to coauthors. Circle size is proportional to the number of coauthors.



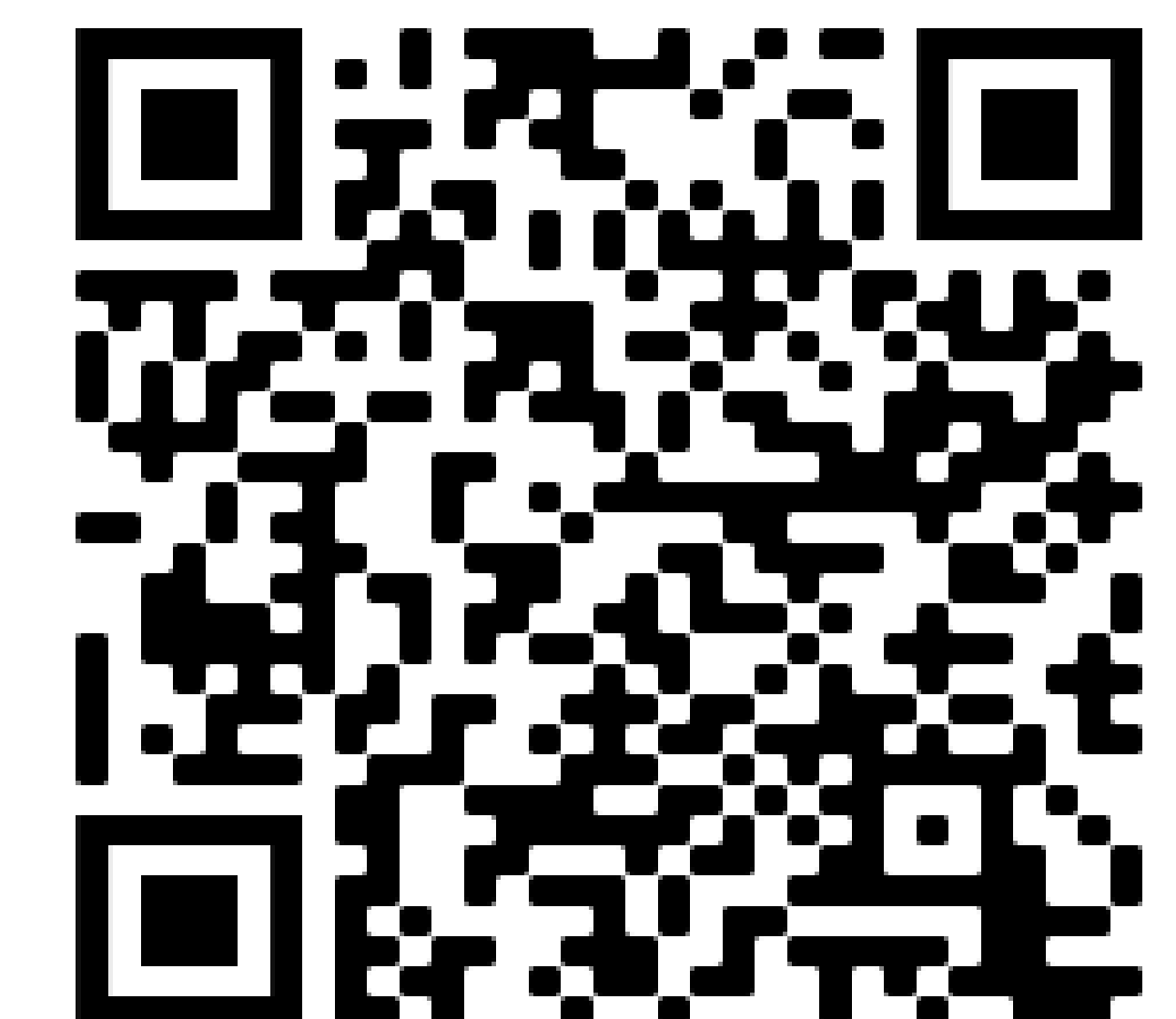
Relationships between Groups Co-authorship Network

Filtered out less-connected authors. Same color means co-authored a paper.

Future Work

- Why did it take so long for public health guidelines to reflect airborne transmission?
- What information did different scientific communities have related to airborne transmission at a given point in time?
- How can the scientific community can facilitate better communication with the public
- It would be helpful to suggest guidelines for improving team science.

Scan for Image



Findings

- Coauthors were frequently based in the same institution/lab or same country.
- A stronger, cohesive argument for airborne transmission came from combining results from multiple fields.
- However, confusion arose between fields because key terms (“aerosol” vs. “droplet”) were understood differently.