Building Resilient International Teams
In the Age of Covid-19
Summary of network analysis

Olivier Walther, Greg Kiker, Erica Odera, Igor Linkov
owalther@ufl.edu

UF

Resilience in international teams

- Covid-19 has disrupted international teams, especially those working in/with developing countries

- Most teams are built to be efficient, not necessarily inclusive or diverse

- What role can diversity and inclusion play in conferring resilient qualities to international teams?

Three teams affected by Covid-19

- We surveyed the networks and beliefs of three Africa-focused research teams based at UF

34 members (2016-)

21 members (2020-)

399 authors (2015-)
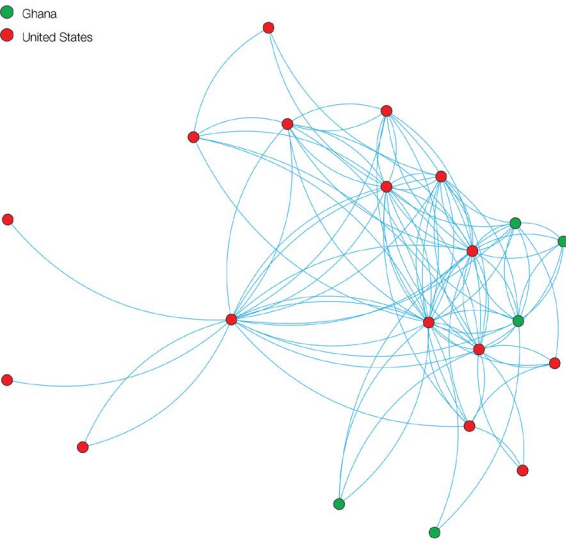
Three types of networks

- GALUP and SRG: work and trust networks
  - With whom do you interact the most?
  - Who would you seek advice from?

  - Very high response rates (82% and 86%)

- LSIL: co-authorship network
  - Who has published with whom since 2016?
  - 696 publications, including 79 peer-reviewed articles

  - Comprehensive dataset (100%)

Three international networks
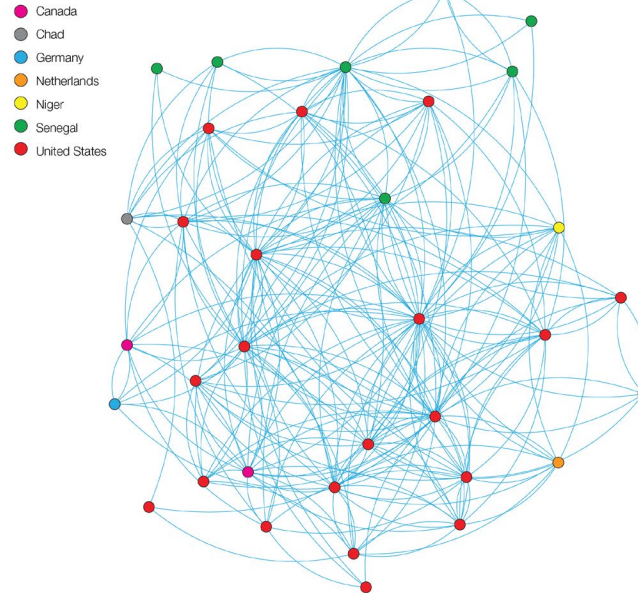
- Network membership by country

2 countries
(US: 76%)

7 countries
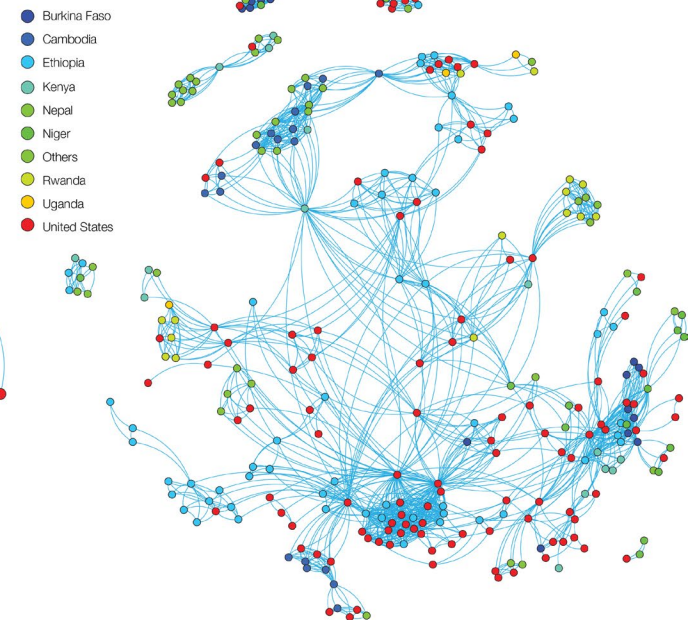**(US: 62%)**

35 countries
(US: 37%)

Ghana Land Use Project (GALUP)

- Ghana
- United States

Sahel Research Group (SRG)

- Canada
- Chad
- Germany
- Netherlands
- Niger
- Senegal
- United States

Livestock Systems Innovation Lab (LSIL)

- Burkina Faso
- Cambodia
- Ethiopia
- Kenya
- Nepal
- Niger
- Others
- Rwanda
- Uganda
- United States

Source: authors

Small-world and regular networks

- Teams rely on closely-knit communities + shortcuts
- Co-authors form (disciplinary) clusters

Provincial or cosmopolitan networks?

- Key metrics: network level

	GALUP		SRG		LSIL
	Work	Trust	Work	Trust	Co-authorship
Nodes	21	18	34	33	293
Ties	107	65	254	163	1545
Density	0.24	0.21	0.23	0.15	0.03
Average degree	10.0	7.22	14.94	9.88	11.5
Average Path Length	1.84	1.83	1.94	2.14	3.99
Agglomeration Coefficient	0.58	0.41	0.50	0.36	0.89
Type of network	Provincial	Provincial	Provincial	Provincial	Neither cosmopolitan nor provincial

Source: authors

Two polarized networks

- Teams are polarized by a few coordinators who have established relationships within and outside their country
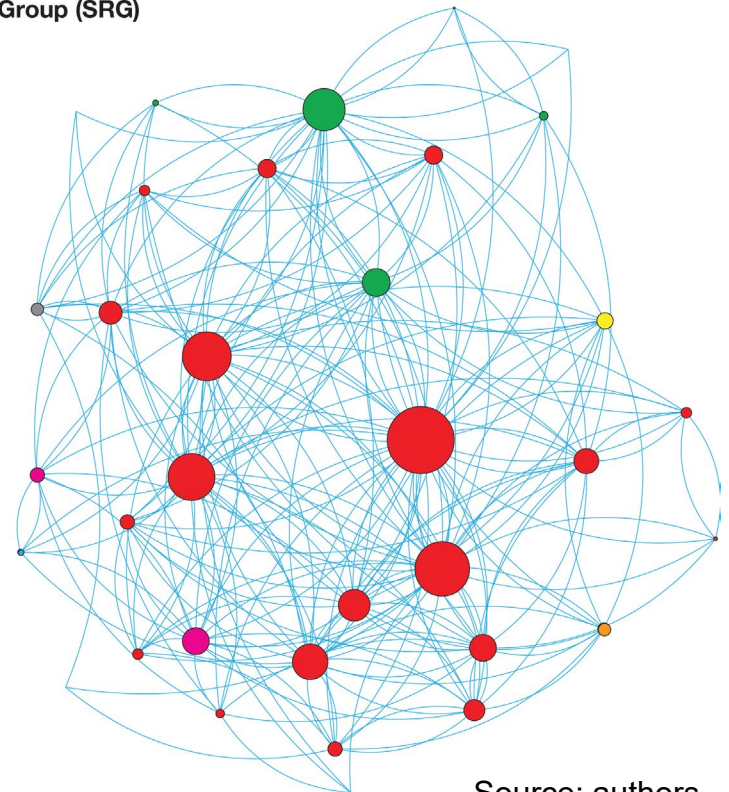

Ghana Land Use Project (GALUP)

- Ghana
- United States
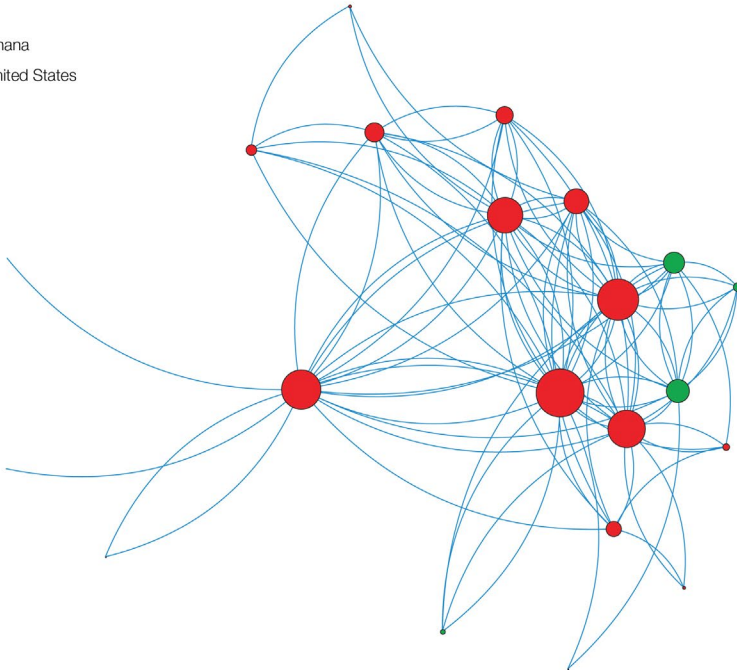
Sahel Research Group (SRG)

- Canada
- Chad
- Germany
- Netherlands
- Niger
- Senegal
- United States

The size of the nodes is proportional to degree centrality, i.e., how many ties each node has.
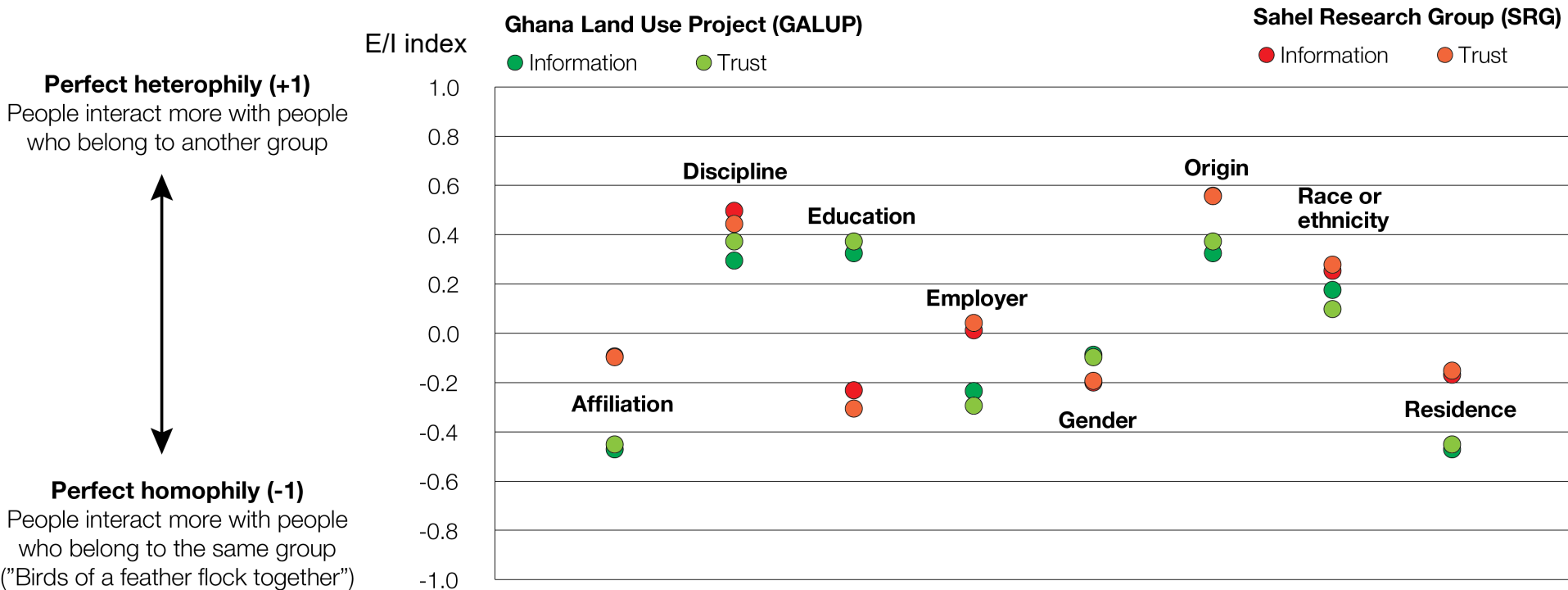
Source: authors

Homophily

- Sharing similar attributes or values increases network density → "Birds of a feather flock together"

- Are researchers from the same field, education level, origin, race and ethnicity more likely to work together or trust each other?

→ Are networks diverse and inclusive?

Two inclusive networks

- Teams tend to exchange information or trust each other irrespective of their social and professional attributes

Perfect heterophily (+1)
People interact more with people who belong to another group

Perfect homophily (-1)
People interact more with people who belong to the same group ("Birds of a feather flock together")

Ghana Land Use Project (GALUP)
● Information ● Trust

Sahel Research Group (SRG)
● Information ● Trust

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Discipline
Education
Employer
Affiliation
Gender
Origin
Race or ethnicity
Residence

Source: authors

Conclusions and next steps

- Teams form "small-world" communities that facilitate information exchange and trust

- Networks are structured around coordinators (not brokers) who have more domestic and international ties

- Low homophily points to the benefits of building teams around a diverse pool of researchers

→ Integrate network results and metrics (dynamic)

→ From description to modelling

About the project

- Linkov, I., Trump, B., & Kiker, G. (2022). Diversity and inclusiveness are necessary components of resilient international teams. *Humanities and Social Sciences Communications*, 9(1), 1-5.

- Website: https://abe.ufl.edu/eager/

- Funding: National Science Foundation (NSF) EAGER grant, "Inclusiveness and Diversity as Building Blocks of Resilient International Research Teams in the Age of COVID-19". 2021-2023.