POPCORN PANEL!

We'll hear from some experts and see what "pops" as a group.

Some thinking questions

How did you start working with spatial social networks?

What do you find interesting?

Why do you think the topic is important?

How you think others think about spatial social networks?

What issues / challenges have you have encountered?

What do you think the cutting edge is?

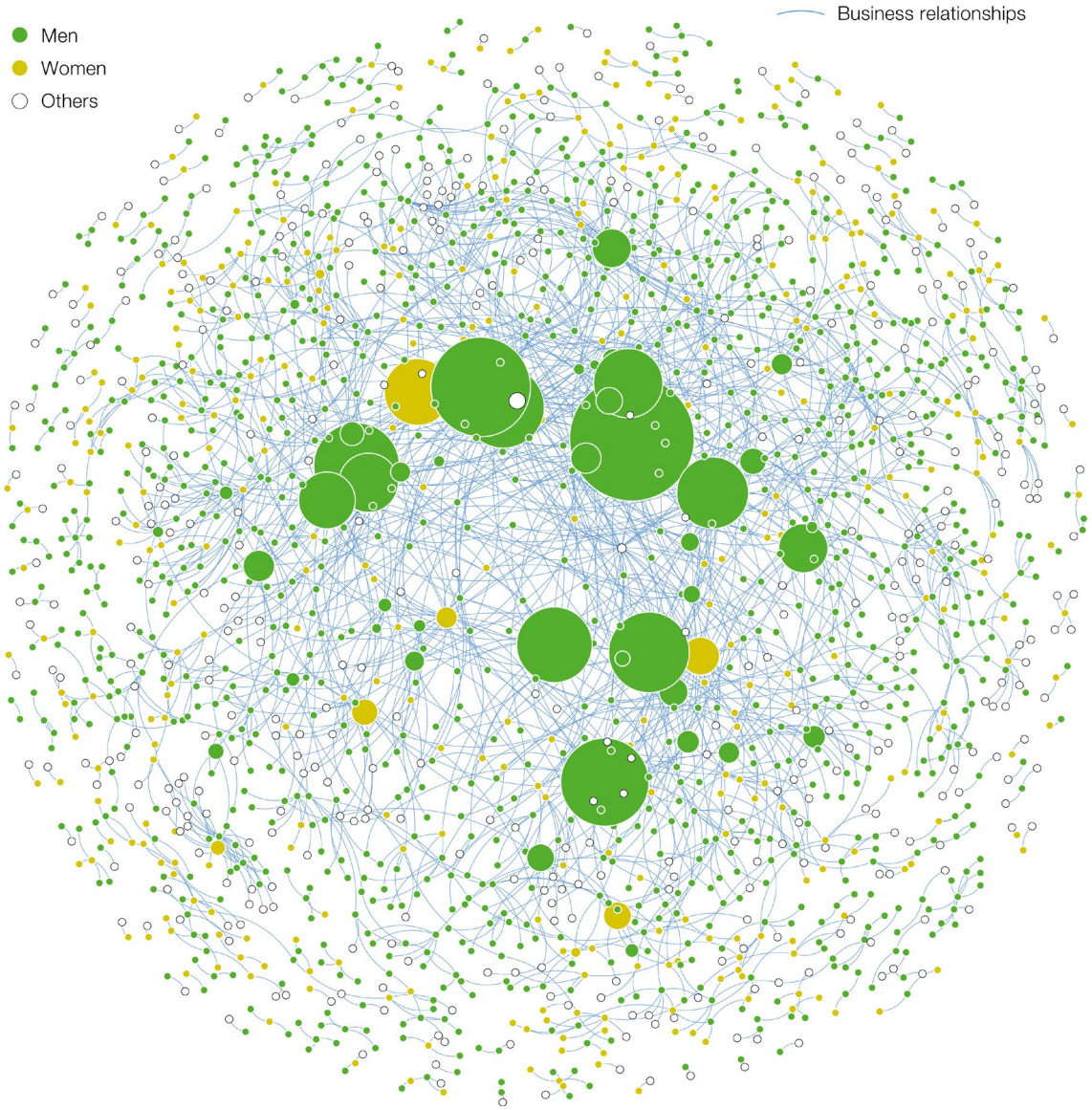
Have you had any "aha" moments, or any moments that made you reflect?

This is a little more 'salon' like than lightning talks.

Olivier J. Walther: Where it all started

The Malanville market in Benin, West Africa.
Source: Walther, 2007.

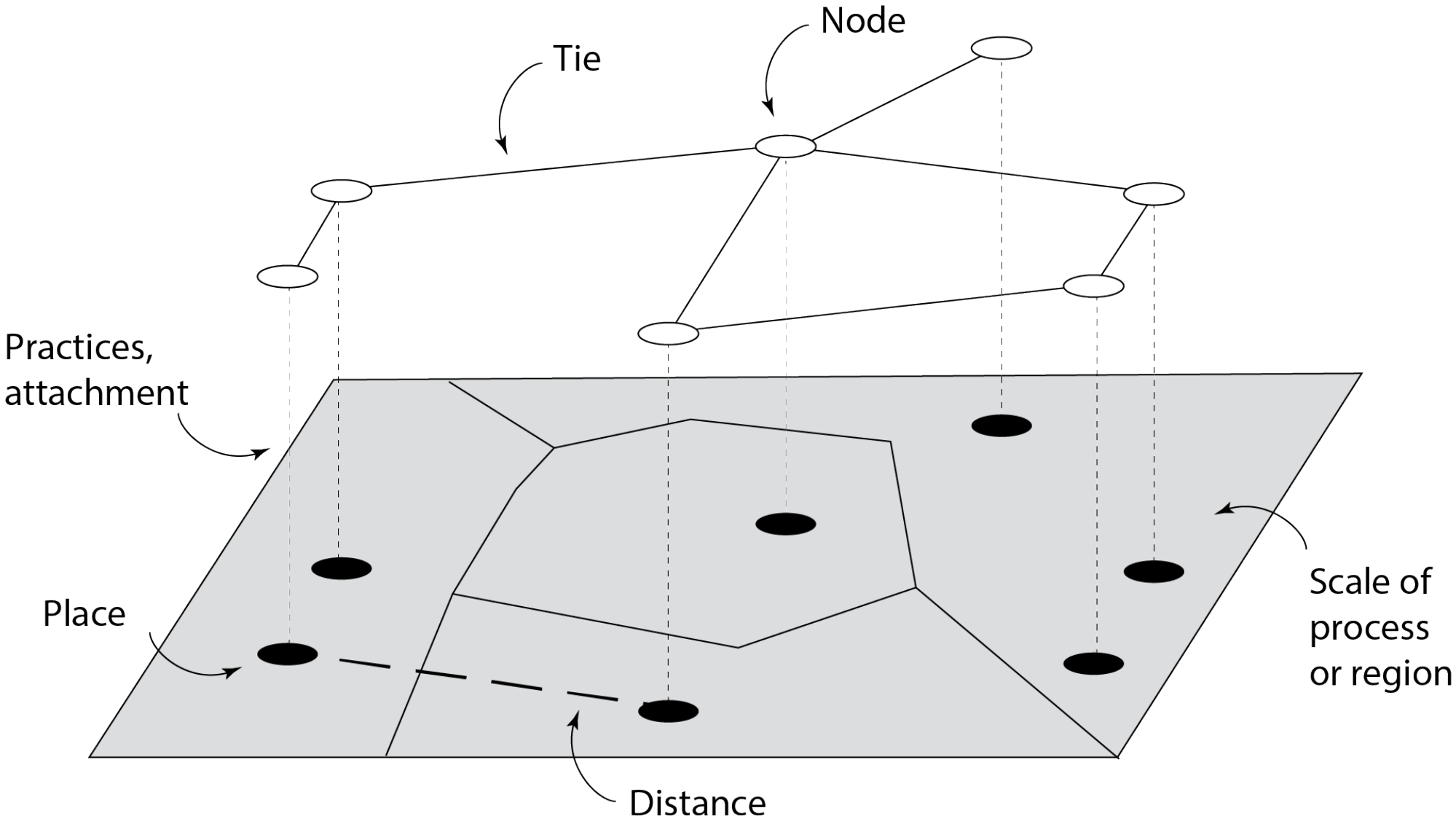
Gender is a strong predictor of social ties



- The size of the nodes (traders) is proportional to their betweenness centrality in 2018.
- The edges signify business relationships in the rice trade network.

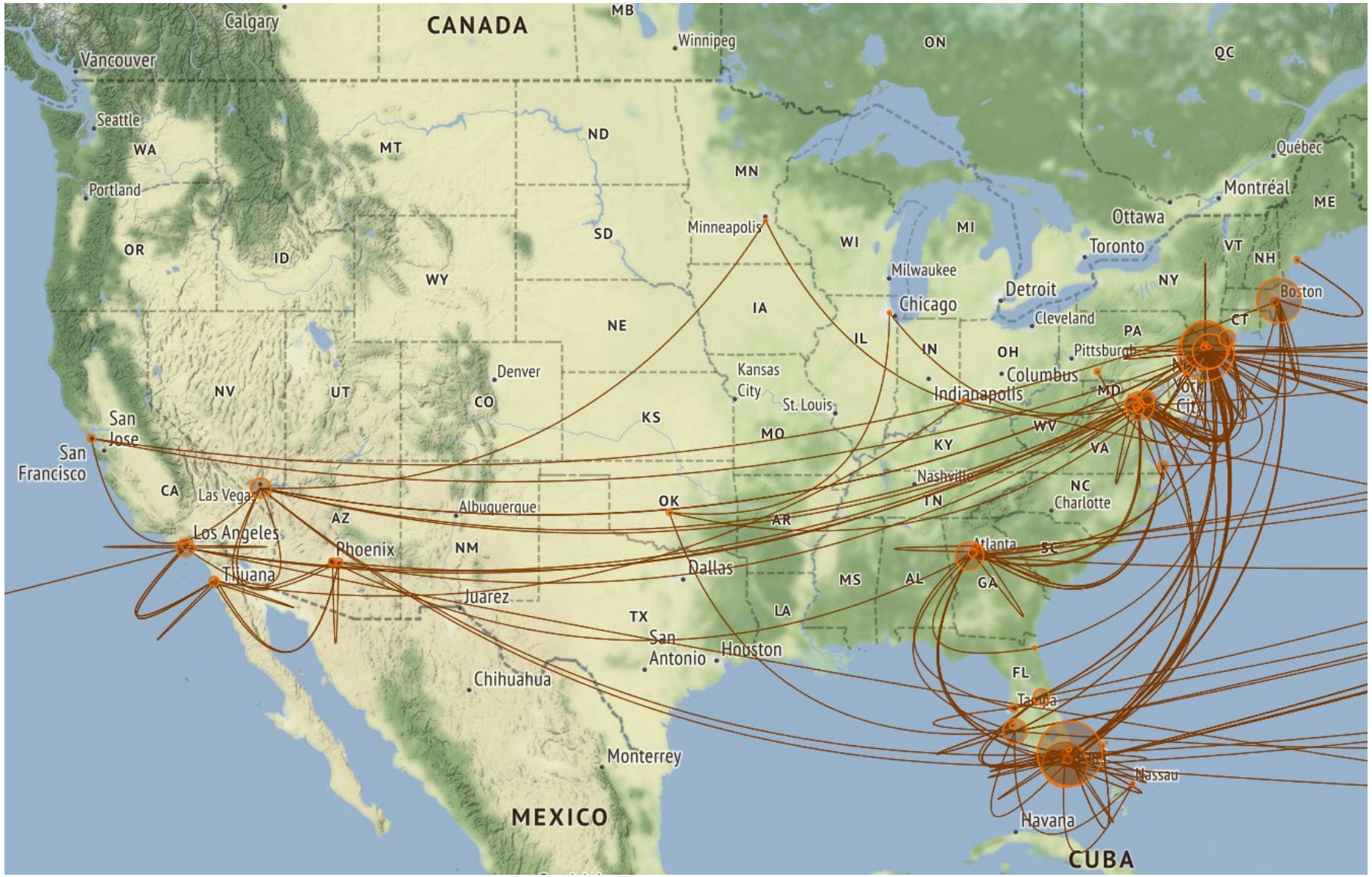
Source: Walther et al. (2019).

How space and social networks interact



Source: Radil and Walther (2019)

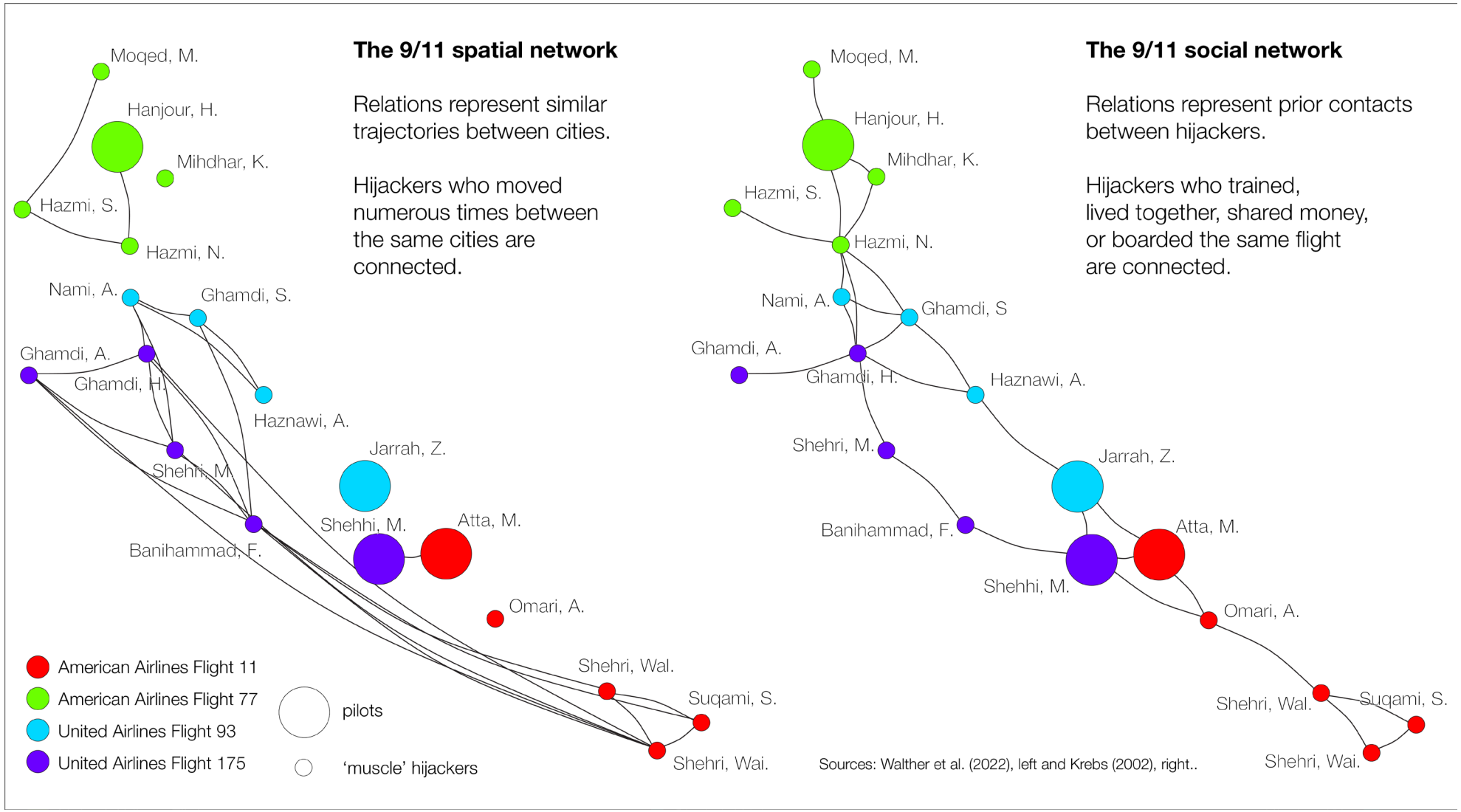
Domestic travel patterns of the 9/11 hijackers



- The size of the nodes is proportional to the number of trips that originated in each city (degree centrality) from 1997-2001.

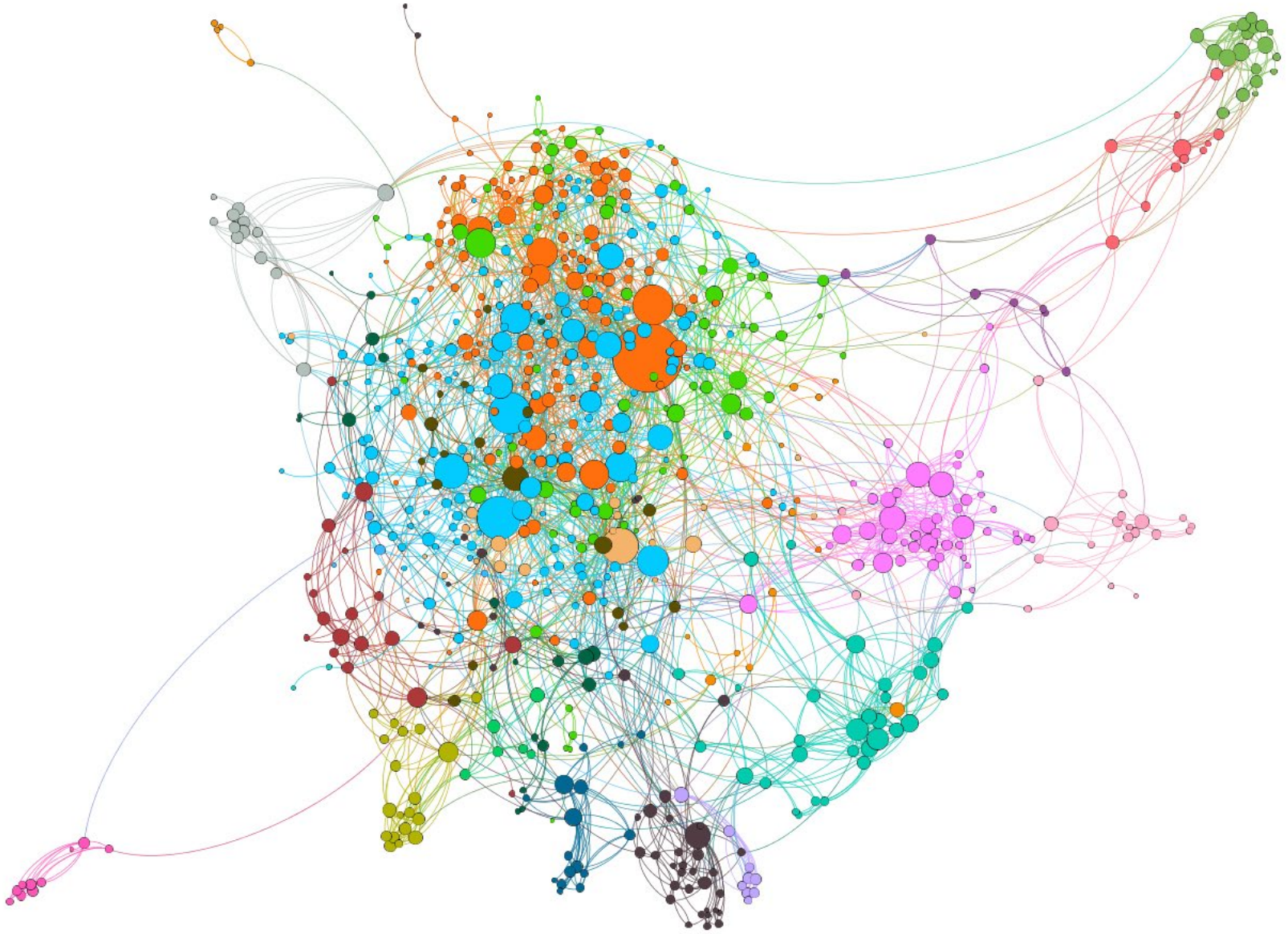
Source: Walther et al. (2023)

Space can inform social structure

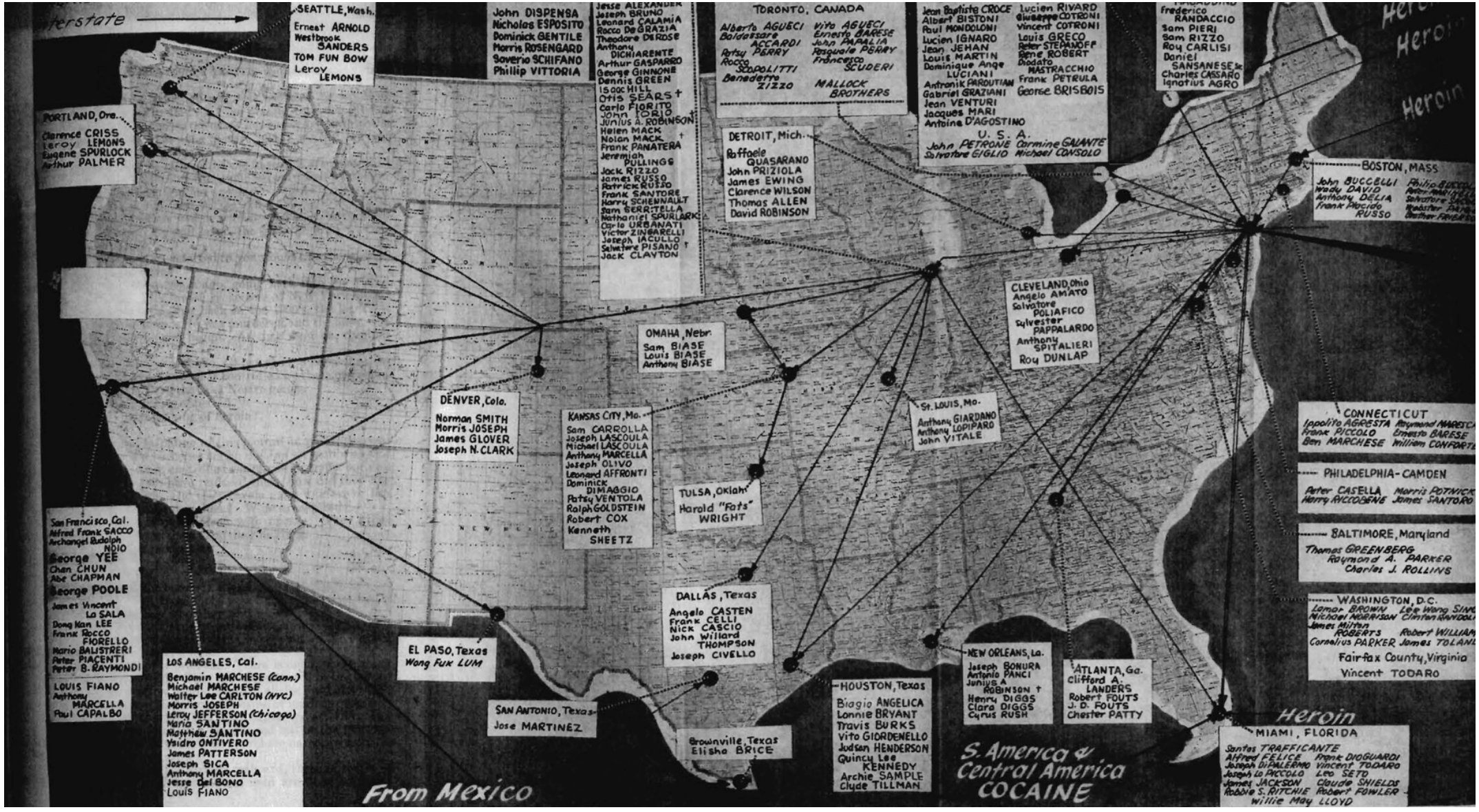


Sources: Walther et al. (2023) and Krebs (2002, right)

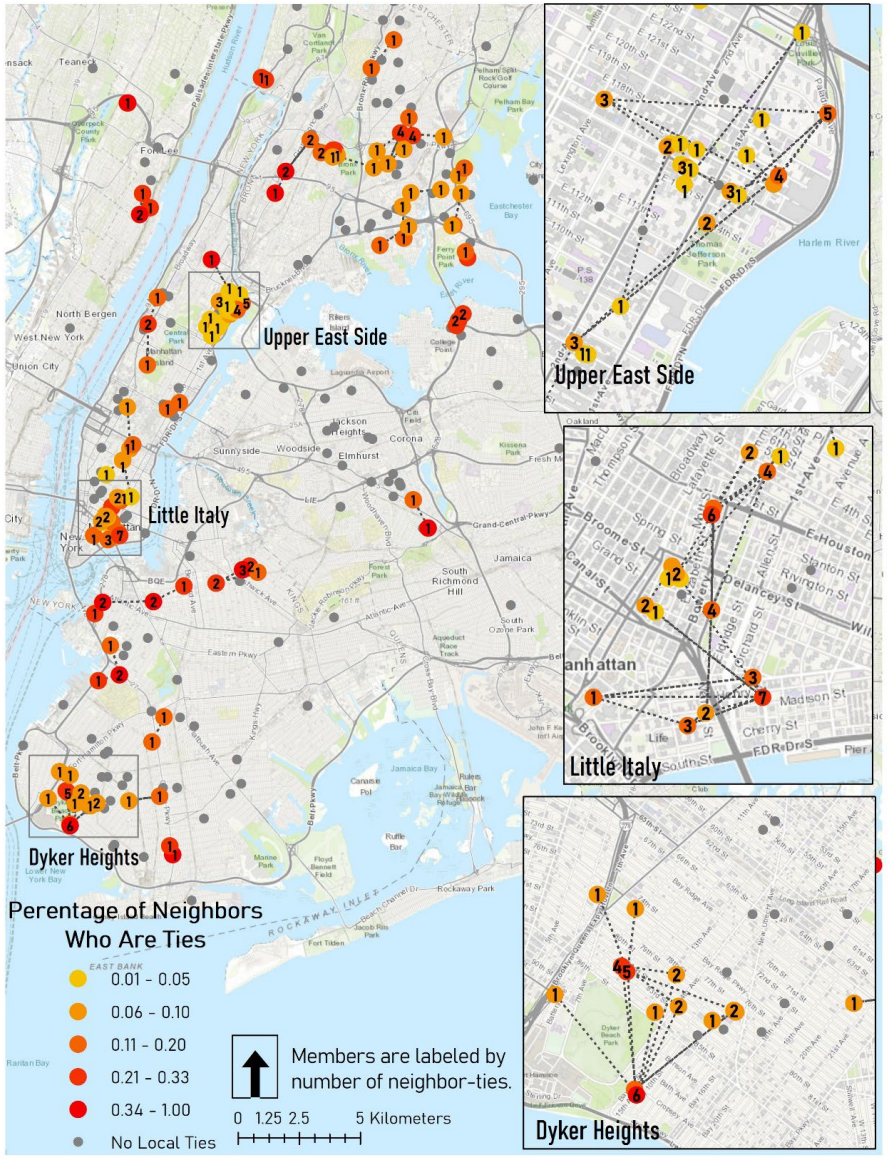
Daniel DellaPosta: The American Mafia



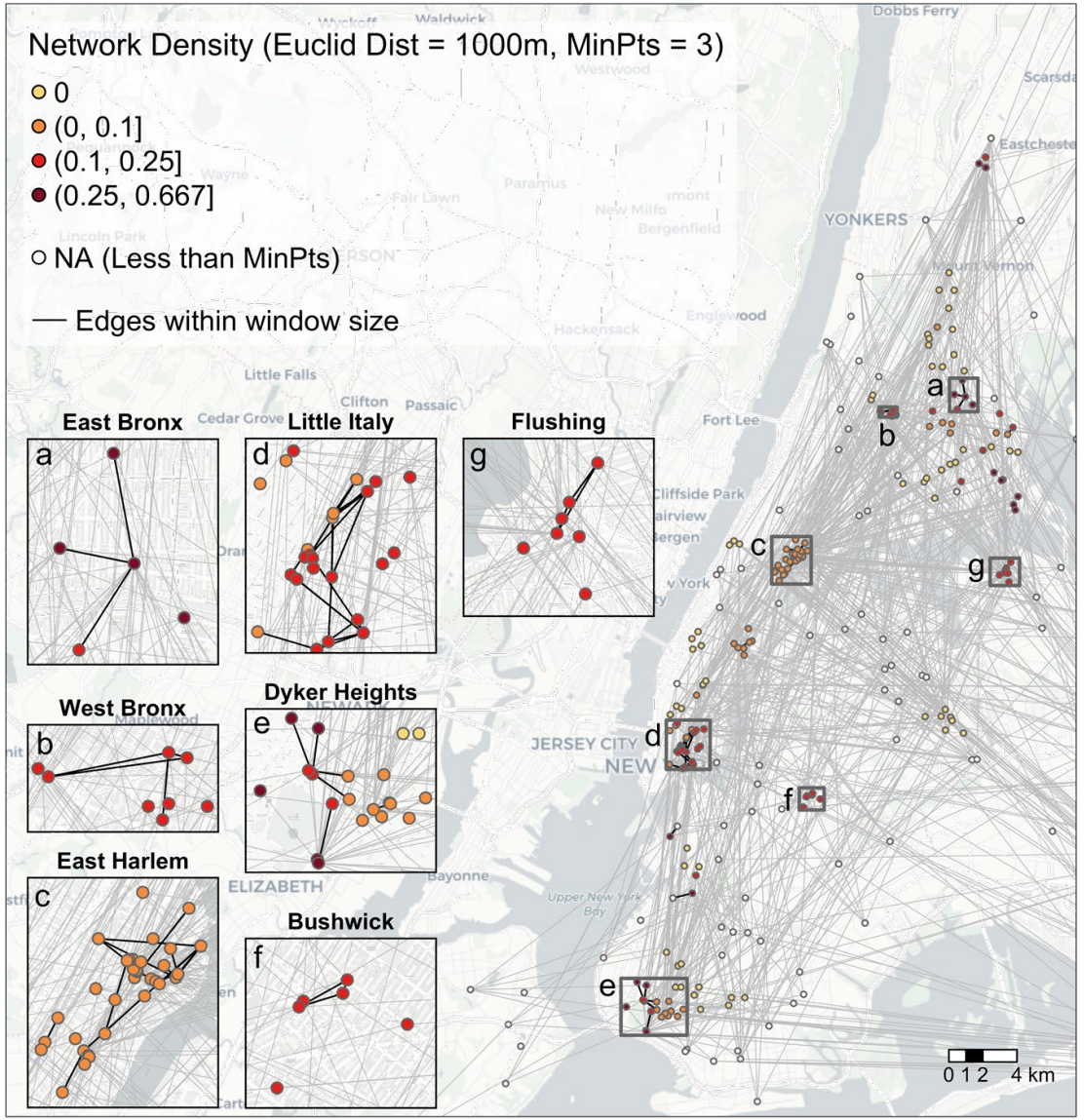
Daniel DellaPosta: The American Mafia



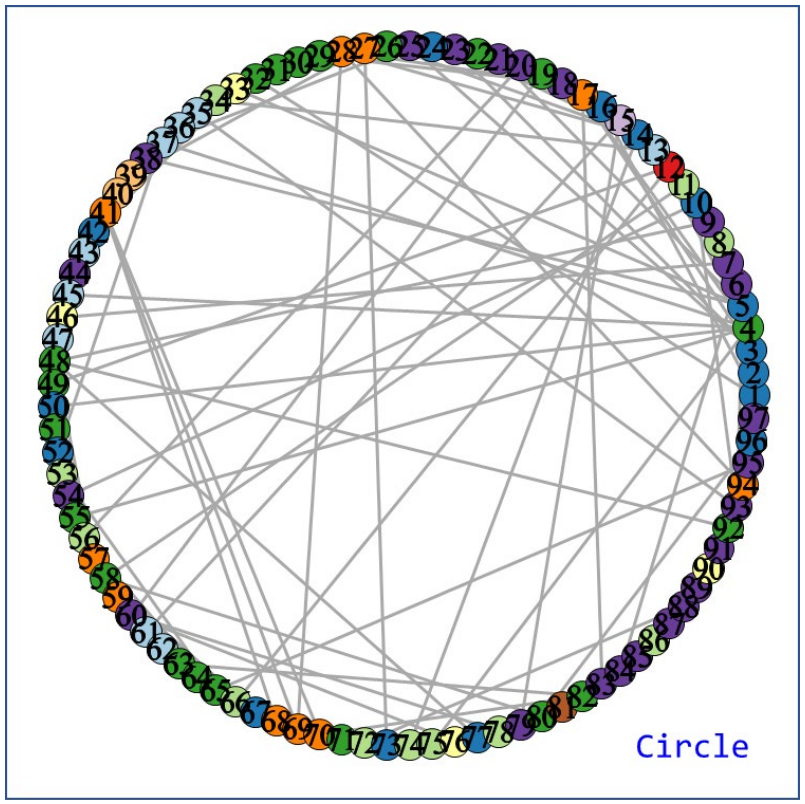
Daniel DellaPosta: The American Mafia

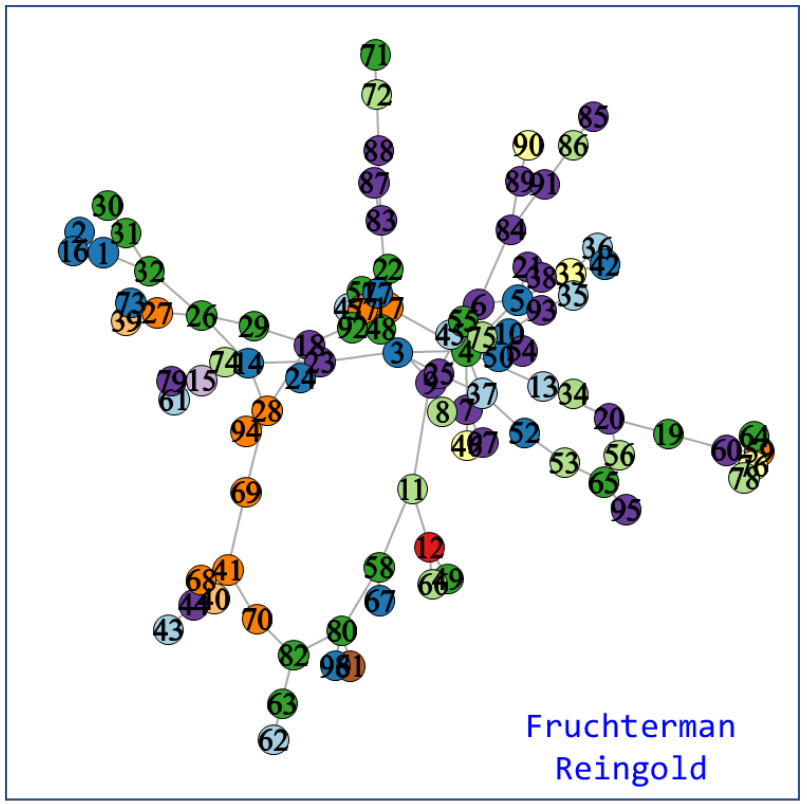


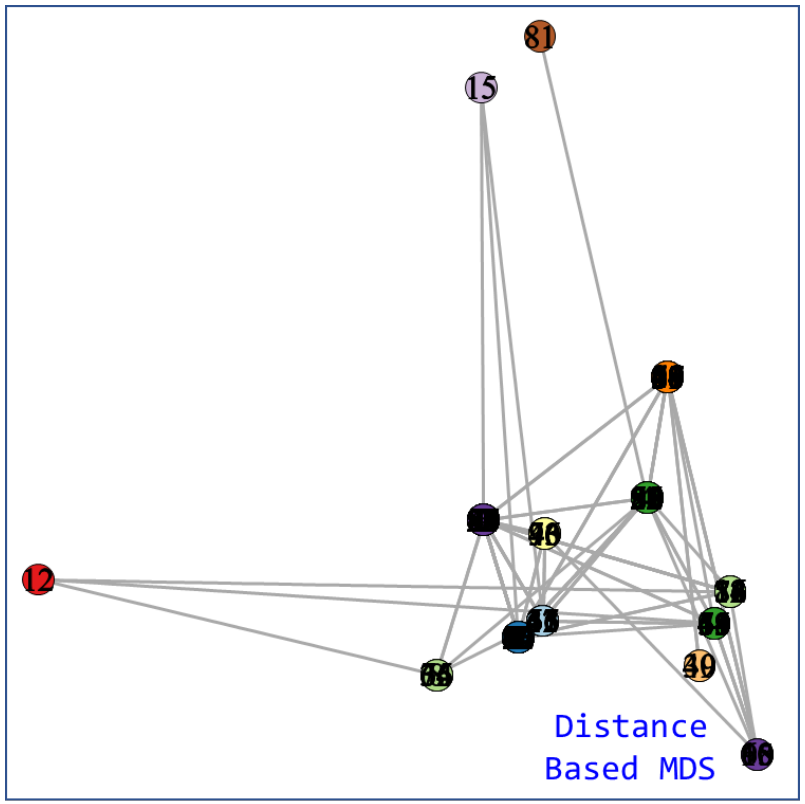
New York NDScan



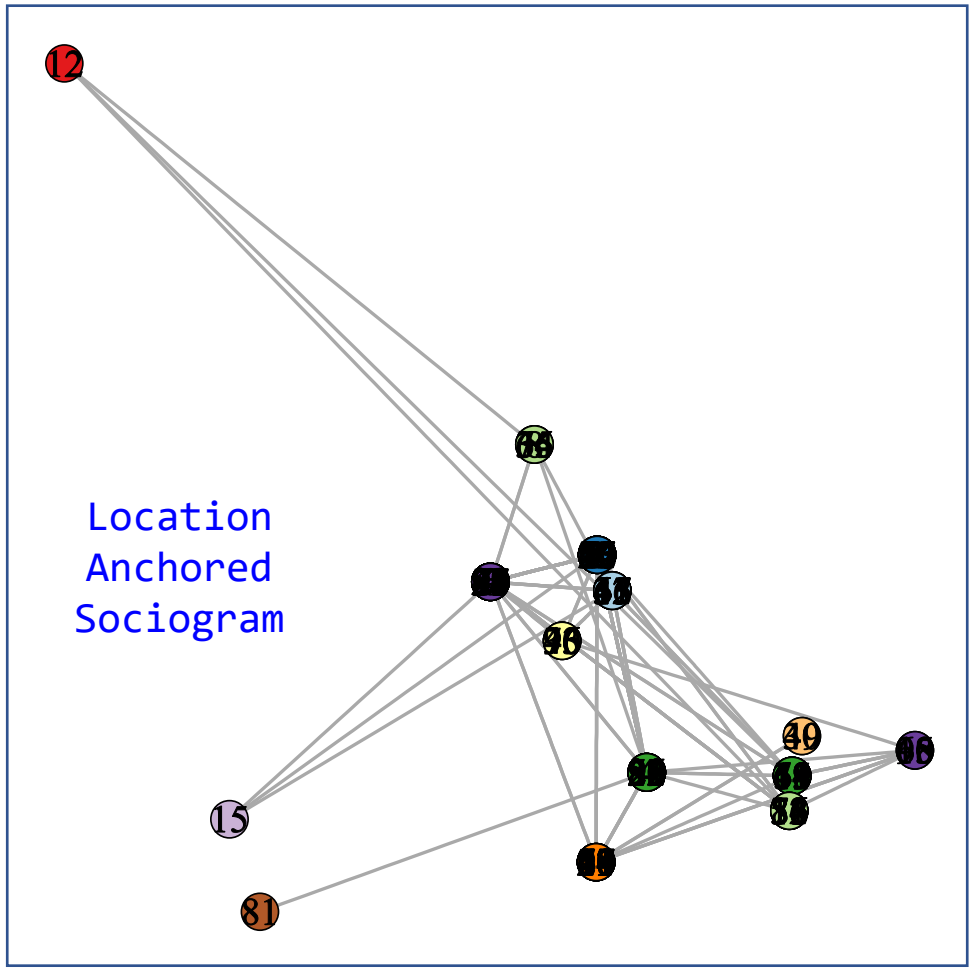
Dipto Sarkar: Kibale, Uganda

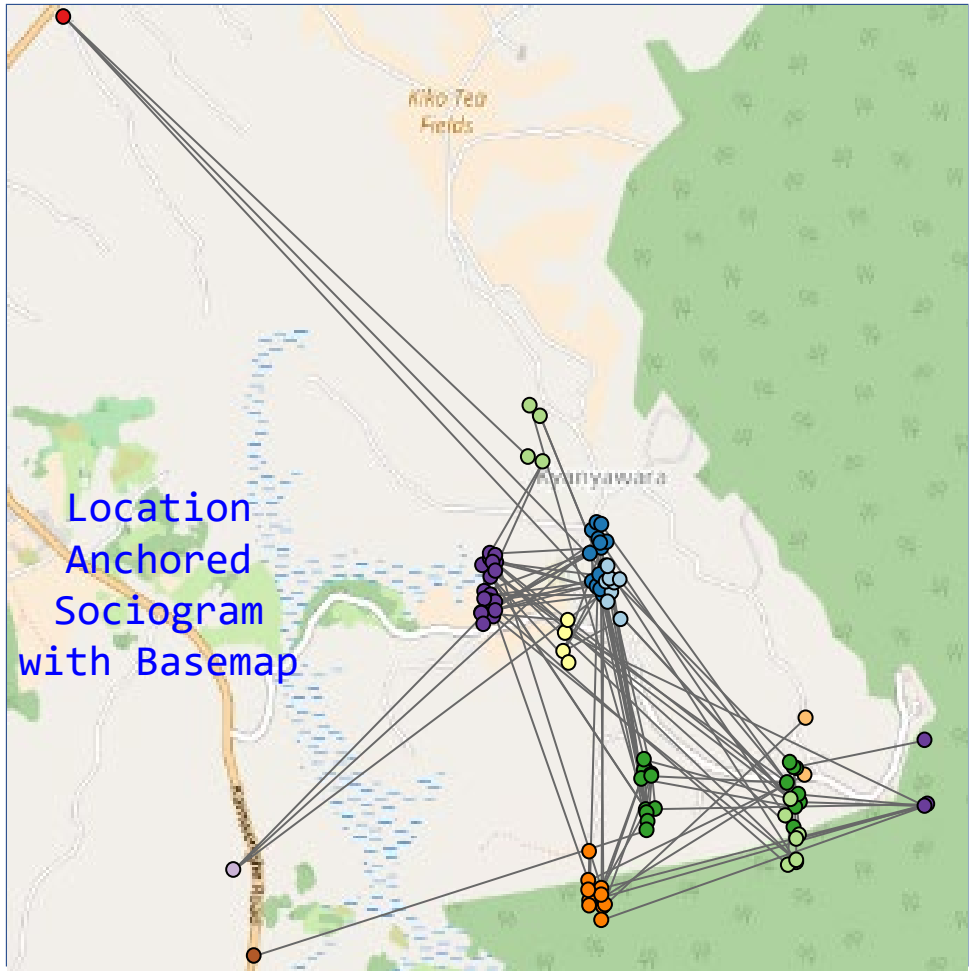






Dipto Sarkar: Kibale, Uganda



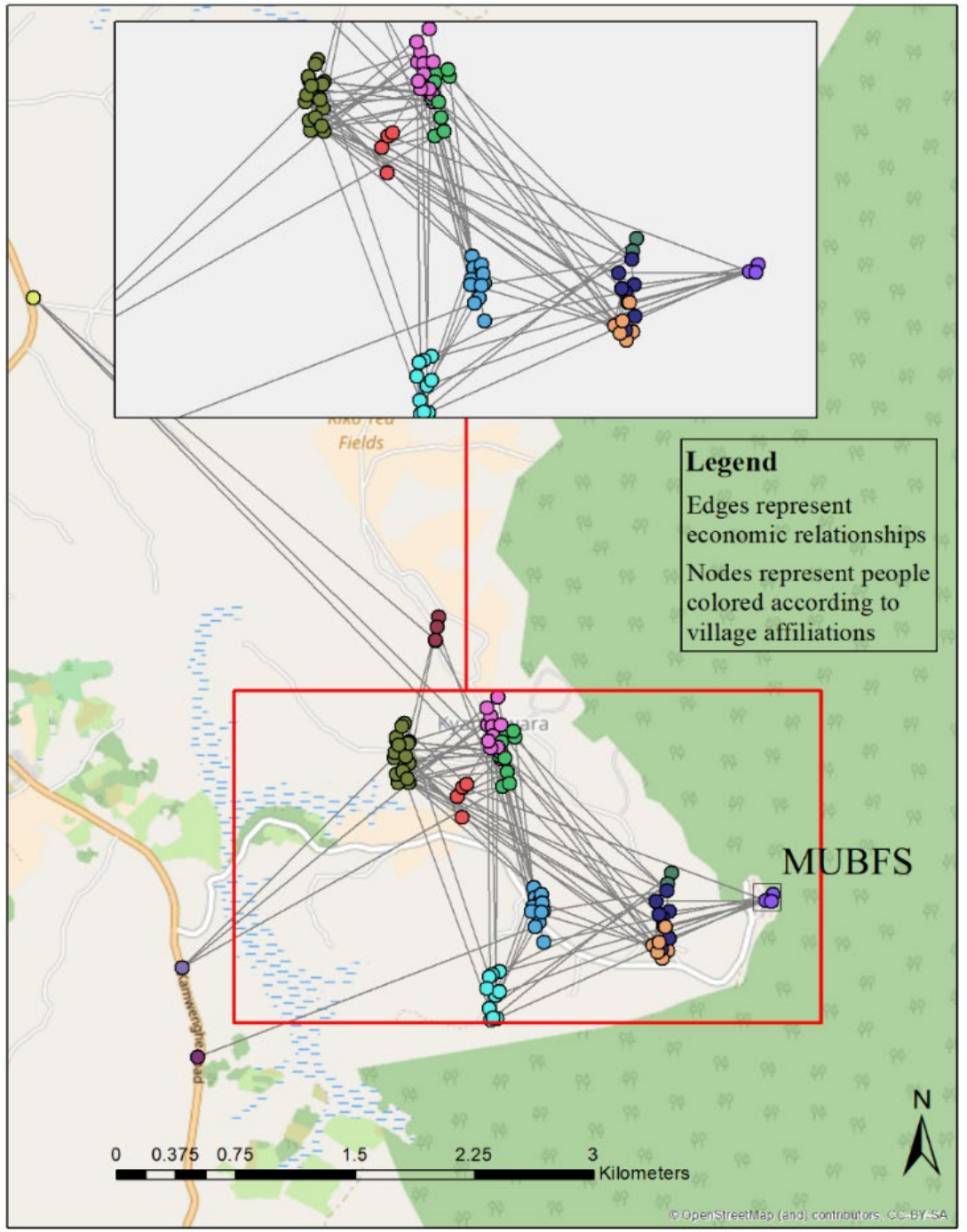


Dipto Sarkar: Kibale, Uganda

Kibale National Park: *individuals who helped people get a job*.

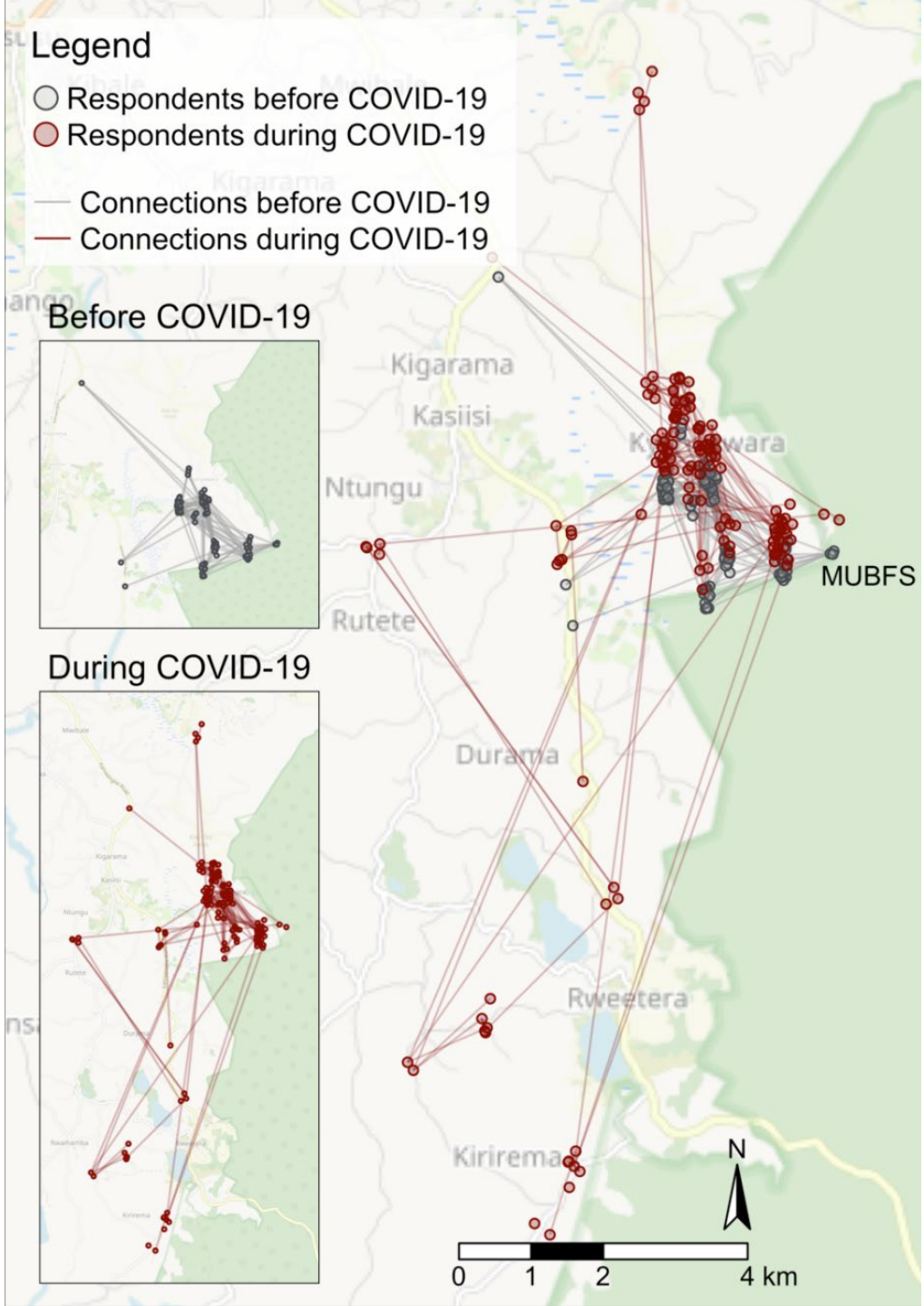
The network flattening ratio F_s is the sum of the Euclidean distance between every pair of connected nodes in the most "efficient" network $\bar{G}$ compared to the sum of the Euclidean distance between every pair of connected nodes in G.

$$F_s = \frac{\sum \overline{|v_i, v_j|}}{\sum |v_i, v_j|}$$



Sarkar, D., Andris, C., Chapman, C. and Sengupta, R. (2019) **Metrics For Characterizing Network Structure and Node Importance in Spatial Social Networks.** *International Journal of Geographical Information Science*.

Dipto Sarkar: Kibale, Uganda



Jaimie Kelly: The Thrive Network

TRIVE: New River Valley Food Access Network

THE COMMUNITY FOUNDATION OF THE NEW RIVER VALLEY

THE FARMACY GARDEN

Virginia Cooperative Extension
Virginia Tech
Virginia State University

RU RADFORD UNIVERSITY

VT VIRGINIA TECH

New River HEALTH DISTRICT

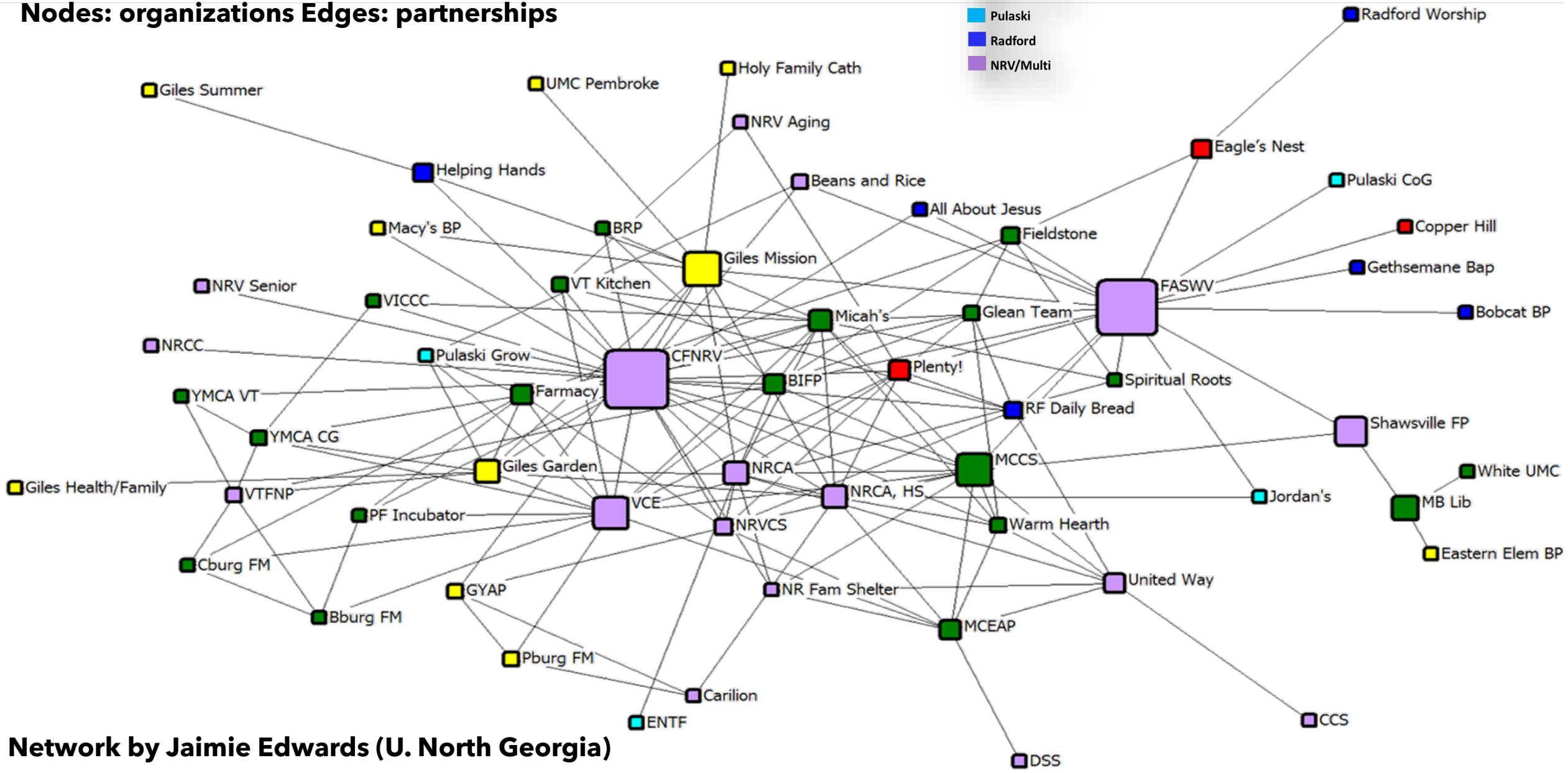
Virginia Cooperative Extension • Family Nutrition Program • Eat Smart Move More

FEEDING AMERICA Southwest Virginia

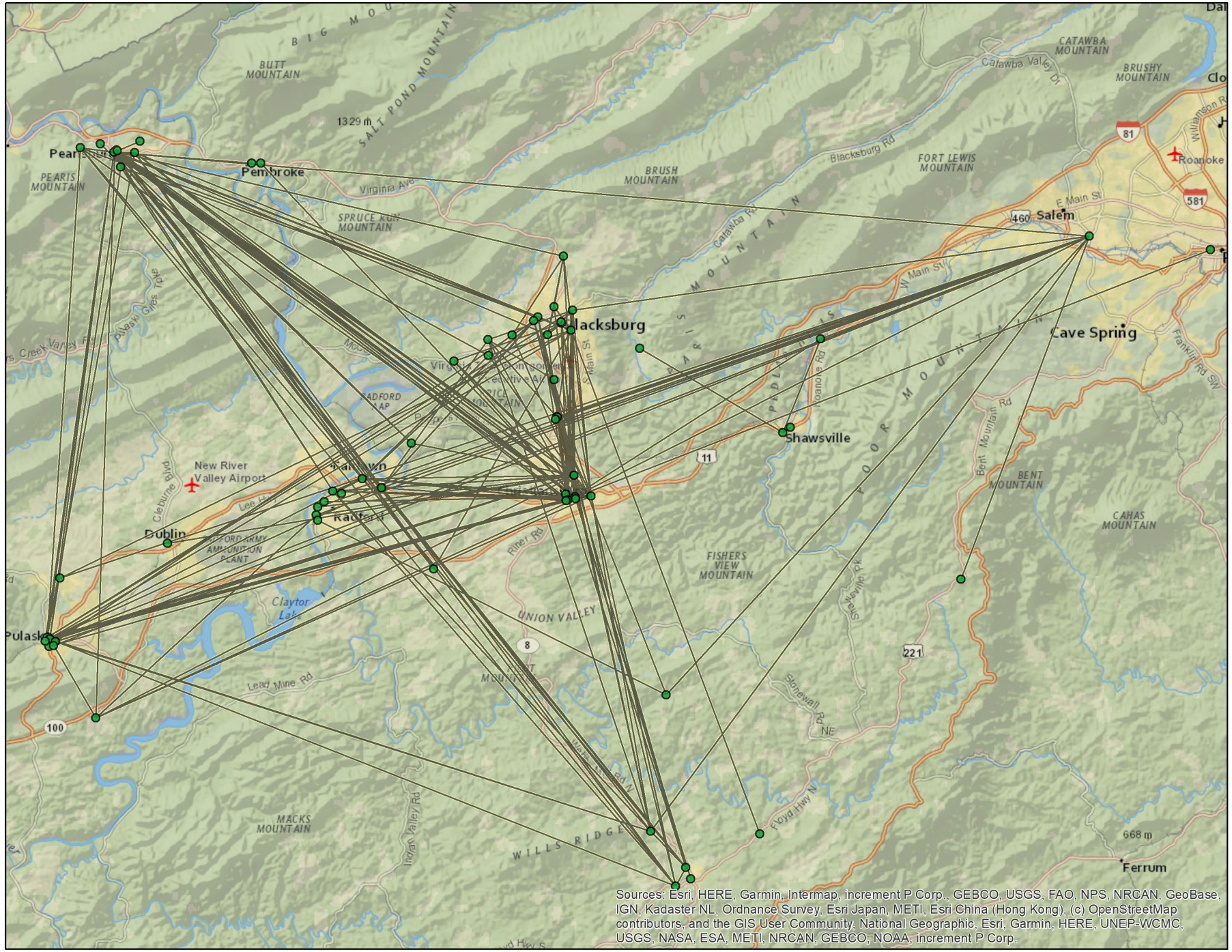
THRIVE: *NRV Food Access Network*

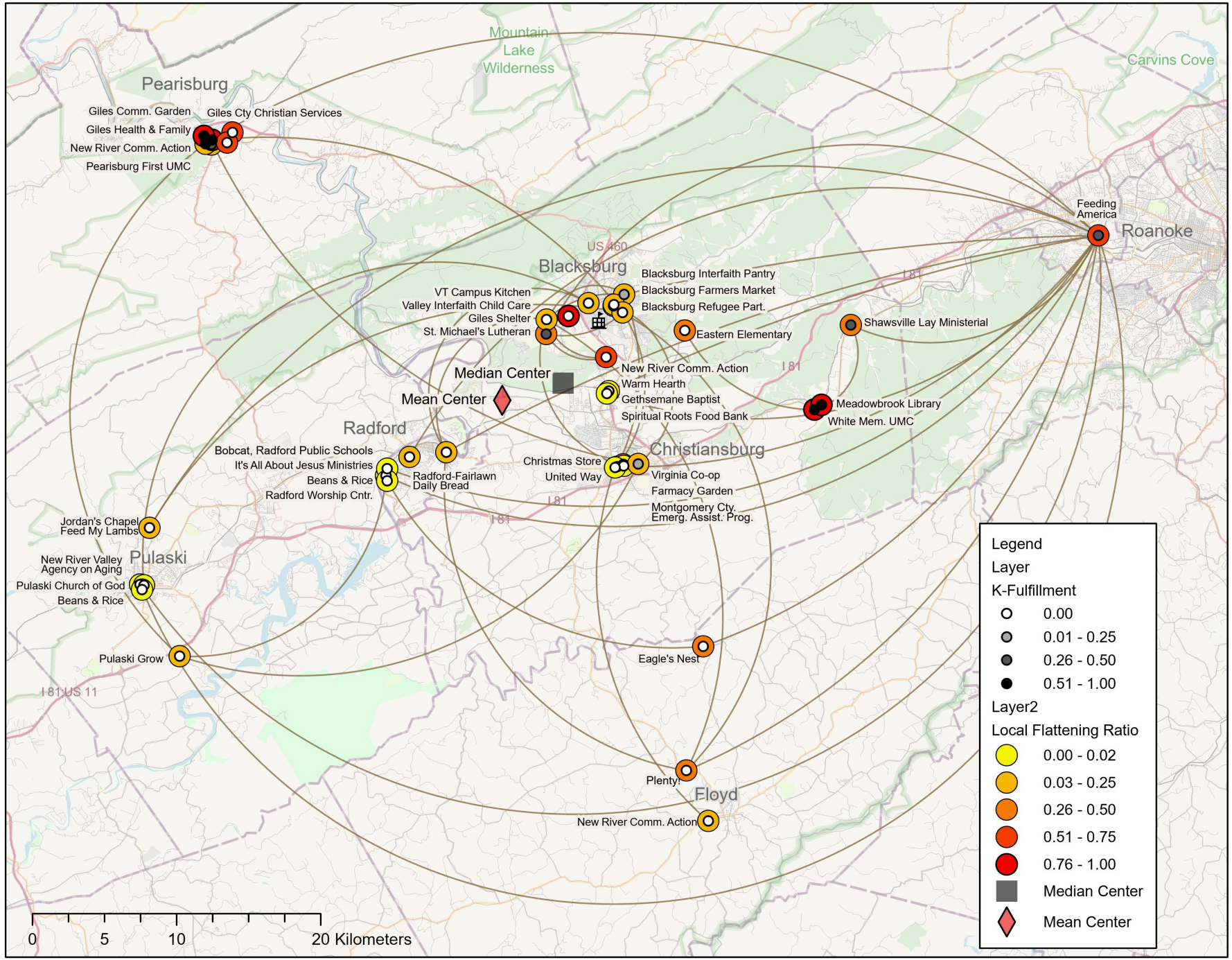
Food Access Network

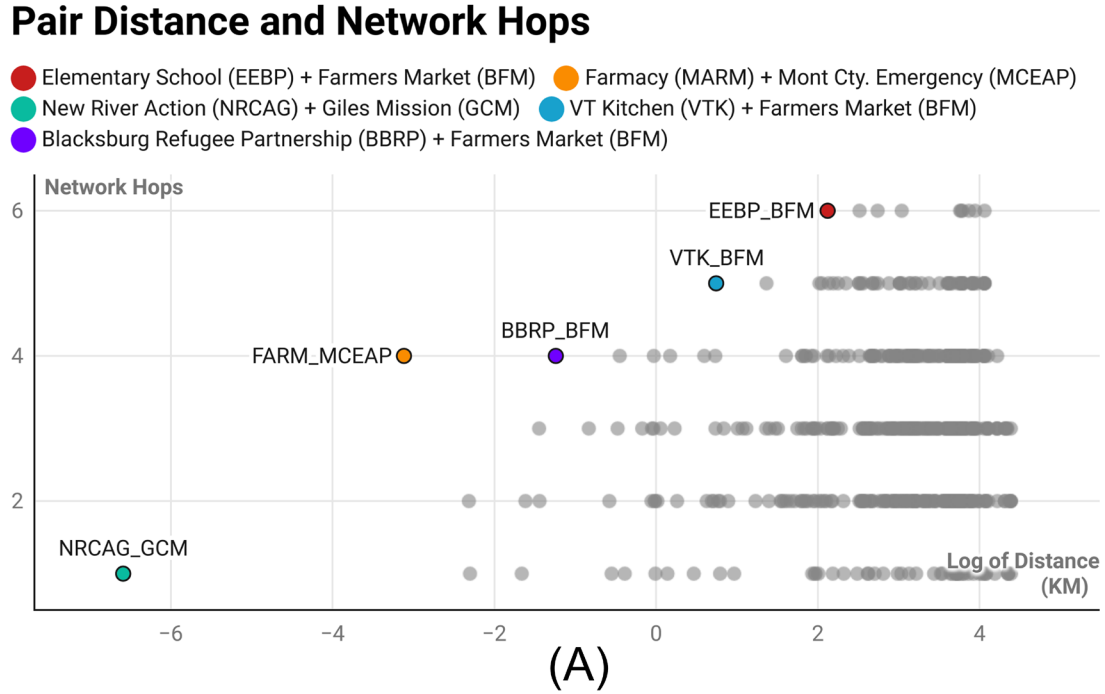
Nodes: organizations Edges: partnerships



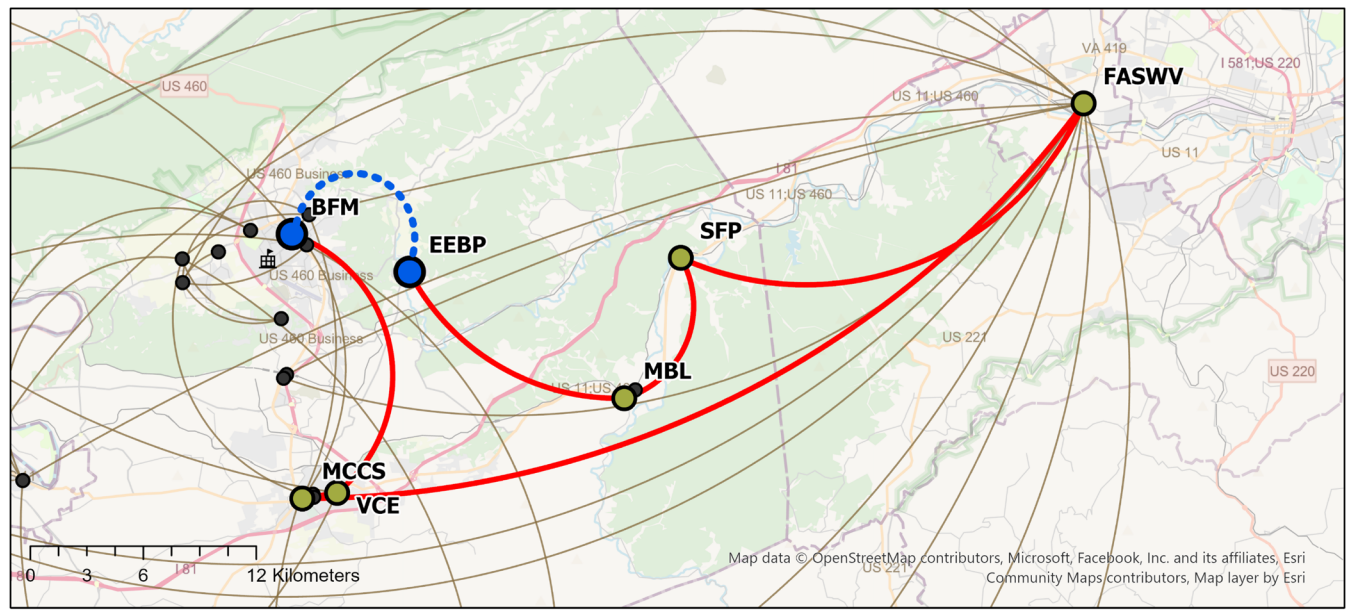
Network by Jaimie Edwards (U. North Georgia)


Pembroke
Blacksburg
Salem
Cave Spring
Shawsville
Radford
Dublin
Pulaski
New River Valley Airport
Roanoke
Ferrum
1329 m
668 m
BUTT MOUNTAIN
SALT POND MOUNTAIN
PEARIS MOUNTAIN
BRUSH MOUNTAIN
SPRUCE RUN MOUNTAIN
FORT LEWIS MOUNTAIN
CATAWBA MOUNTAIN
BRUSHY MOUNTAIN
BENT MOUNTAIN
CAHAS MOUNTAIN
FISHERS VIEW MOUNTAIN
MACKS MOUNTAIN
WILLS RIDGE
UNION VALLEY
Claytor Lake
Virginia Ave
Blacksburg Rd
Main St
Lead Mine Rd
Stonewall Rd NE
Floyd Hwy N
Bent Mountain Rd
Cleburne Blvd
Indian Valley Rd
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community, National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.


Mountain Lake Wilderness
Carvins Cove
Pearisburg
Giles Comm. Garden
Giles Cty Christian Services
Giles Health & Family
New River Comm. Action
Pearisburg First UMC
Feeding America
Roanoke
US 460
Blacksburg
Blacksburg Interfaith Pantry
Blacksburg Farmers Market
Blacksburg Refugee Part.
VT Campus Kitchen
Valley Interfaith Child Care
Giles Shelter
St. Michael's Lutheran
Eastern Elementary
Shawsville Lay Ministerial
I 81
New River Comm. Action
Median Center
Warm Hearth
Mean Center
Gethsemane Baptist
Spiritual Roots Food Bank
Meadowbrook Library
White Mem. UMC
Radford
Christiansburg
Bobcat, Radford Public Schools
It's All About Jesus Ministries
Beans & Rice
Radford Worship Cntr.
Radford-Fairlawn
Daily Bread
Christmas Store
United Way
Virginia Co-op
Farmacy Garden
Montgomery Cty. Emerg. Assist. Prog.
Jordan's Chapel
Feed My Lambs
New River Valley Agency on Aging
Pulaski
Pulaski Church of God
Beans & Rice
Pulaski Grow
Eagle's Nest
I 81 US 11
Plenty!
Floyd
New River Comm. Action
0
5
10
20 Kilometers
Legend
Layer
K-Fulfillment
0.00
0.01 - 0.25
0.26 - 0.50
0.51 - 1.00
Layer2
Local Flattening Ratio
0.00 - 0.02
0.03 - 0.25
0.26 - 0.50
0.51 - 0.75
0.76 - 1.00
Median Center
Mean Center


Pair Distance and Network Hops
Elementary School (EEBP) + Farmers Market (BFM)
Farmacy (MARM) + Mont Cty. Emergency (MCEAP)
New River Action (NRCAG) + Giles Mission (GCM)
VT Kitchen (VTK) + Farmers Market (BFM)
Blacksburg Refugee Partnership (BBRP) + Farmers Market (BFM)
Network Hops
6
4
2
EEBP_BFM
VTK_BFM
BBRP_BFM
FARM_MCEAP
NRCAG_GCM
Log of Distance (KM)
−6
−4
−2
0
2
4

(A)


FASWV
BFM
EEBP
SFP
MBL
MCCS
VCE
US 460
US 460 Business
US 11;US 460
VA 419
I 581;US 220
US 11
US 221
US 220
I-81
0
3
6
12 Kilometers
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(B)