Structures of Stakeholder Relationships in Making Road Safety Decisions

Collaboration: University of North Carolina, Chapel Hill (Highway Safety Research Center & Public Health); University of California, Berkeley

R1 Project Team

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Overview

- **<u>Research Questions:</u>**

  1. Which U.S.-based organizations and actors are involved in influencing the safety of cities' transportation systems?

  2. How do these organizations and actors make transportation safety decisions?

  3. Which U.S. municipalities serve as opinion leaders in the realm of road user safety?

- **<u>Key Research Methods:</u>**

  1. Conduct practitioner survey to identify road safety influencers

  2. Systematically code the content of cities' Vision Zero plans

  3. Carry out detailed organizational network analysis

Relationship to CSCRS Focus Areas

- **Integrated Systems Approaches:** implementing multi-disciplinary strategies based on a model that acknowledges the complexity of the relationships between individual, organizational, and policy levels

- **Transportation Workforce Culture:** requires broadening the set of professionals who understand the importance of road safety and identifying effective training strategies and tools for all practitioners

R1 Project Phases

Phase I: Practitioner survey

Phase II: Content analysis of cities' Vision Zero plans

Phase III: Detailed organizational network analysis

Phase I: Practitioner Survey

Practitioner Survey

- Involved conducting a sociometric survey of 183 "road safety professionals" (adapted from *Dearing et al, 2017*)

  – Planners

  – Engineers

  – Public health—predominantly injury prevention

  – Law enforcement

  – Emergency response

- Based on Diffusion of Innovations Theory insight—adoption of any innovation (e.g., safe systems) is never random or instantaneous, but rather *follows predictable patterns of social influence*

Phase I: Practitioner Survey

- **1,738** individual contacts

- **384** professionals willing to participate in the survey

- **334** professionals whose work involved *"understanding or improving the safety of people on roadways"*

- **183** professionals provided complete responses

# Core Survey Questions

- Please list up to three…
  - Individuals
  - Organizations; and
  - Municipalities
- **outside of your organization/municipality** whose example or reputation you follow with respect to their ***work on reducing roadway fatalities and injuries***

Select Survey Results

- A nation-spanning, inter-city advice network related to traffic safety exists

- Our sample is composed of 230 cities with 372 ties among them

- 50.4% of ties cross regional Census boundaries (i.e., West, Midwest, Northeast, South)

- Network densities are highest among Northeast cities; lowest among cities in the South

U.S. inter-municipal network
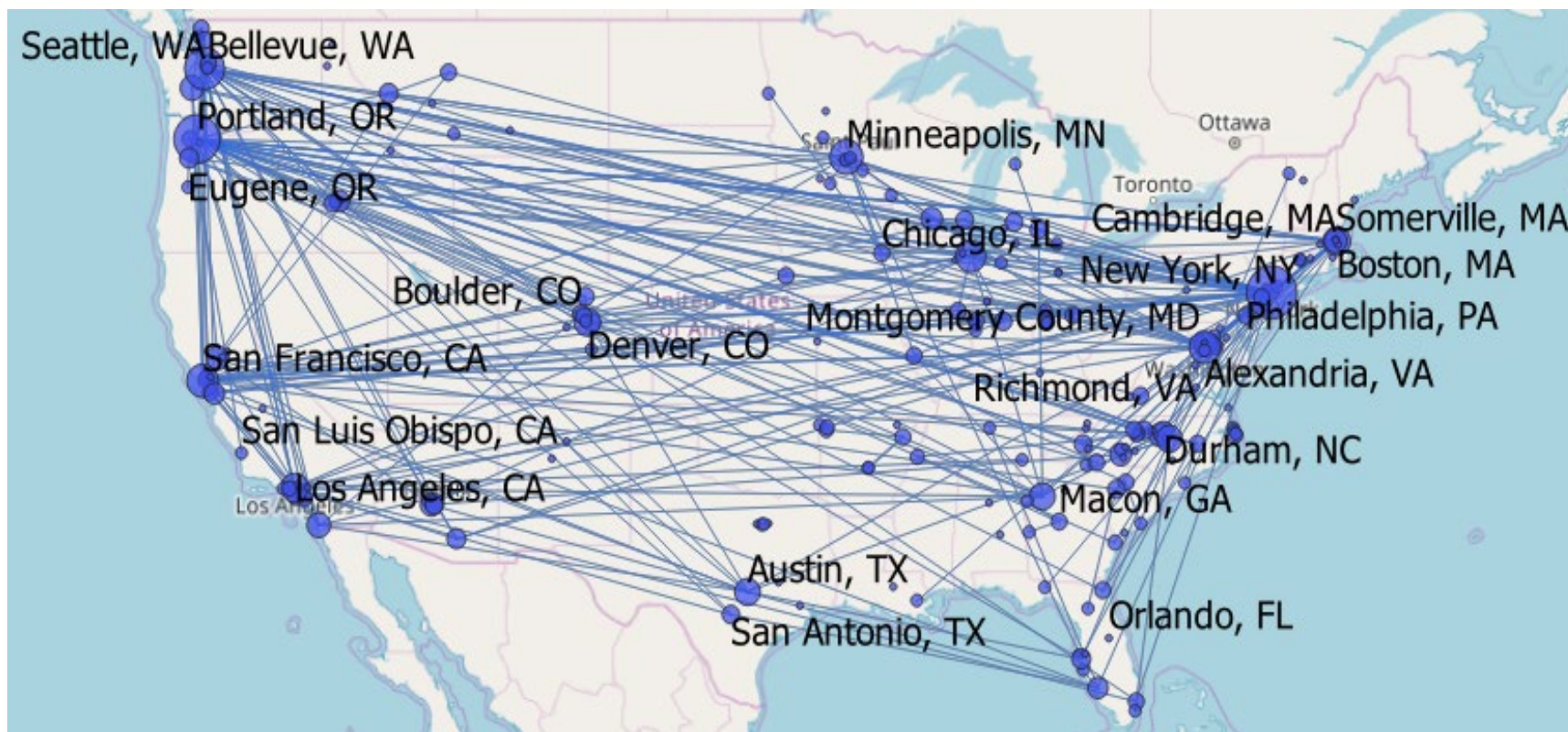
Note. *The size of the circles reflects cities' in-degree centrality, with larger circles indicating higher in-degree centralities. Labeled cities are ones which operate Vision Zero programs. All opinion-leading and boundary-spanning municipalities operate Vision Zero programs.*

Opinion-Leading Cities

In order of in-degree centrality:

1. New York, NY
2. Portland, OR
3. Seattle, WA
4. San Francisco, CA
5. Minneapolis, MN
6. Washington, DC
7. Boston, MA

"When opinion leaders do not adopt an innovation, systems do not change" (*Dearing and Cox, 2018, p. 184*)

Boundary-Spanning Cities

In order of betweenness centrality:

1. New York, NY
2. Portland, OR
3. Minneapolis, MN
4. Seattle, WA

- Attitudes and behaviors tend to be similar among homogenous groups
- Boundary spanners tend to be more attuned to divergent ways of thinking and behaving.
- Bridge-building across gaps between groups can offer insight into approaches otherwise not considered (*Burt, 2004*)

Phase II: Analysis of Cities' Vision Zero Plans

Analysis of Cities' Vision Zero Plans

- Preliminary findings from content analysis of 14 cities' plans:
  - Most cities with Vision Zero plans define safety problem in "global" terms
  - Most involve a diverse array of professionals in action planning
  - Few cities clearly link proposed interventions with identified safety problems
  - Few cities describe plans for performance management
  - Few cities employ *systemic safety* (i.e., proactive, risk-based) approaches

- To be continued in a Year 2 project: **R17 – "Strengthening Existing and Facilitating New Vision Zero Plans"**

Phase III: Organizational Network Analysis

Organizational Network Analysis

Involved:

– Coordinating with the *Vision Zero Network* to identify "key contacts" in four opinion-leading US cities—New York, Portland, Seattle, and San Francisco

– Coordinating with each city's key contact to identify people in the city's "Vision Zero" network

– Contacting the 8-15 people in each city's Vision Zero network regarding contact frequency, productivity, and resource sharing among city agencies/organizations

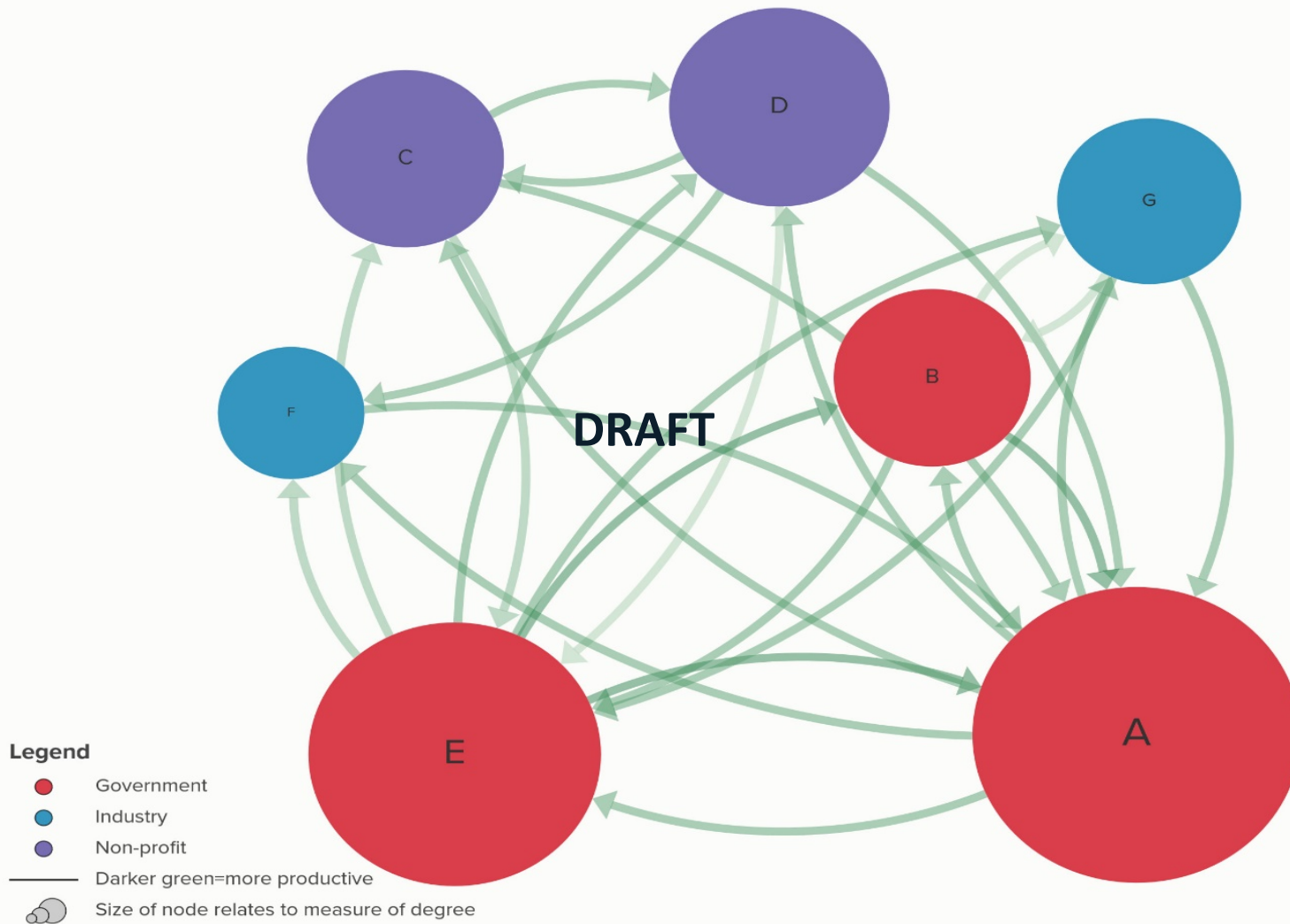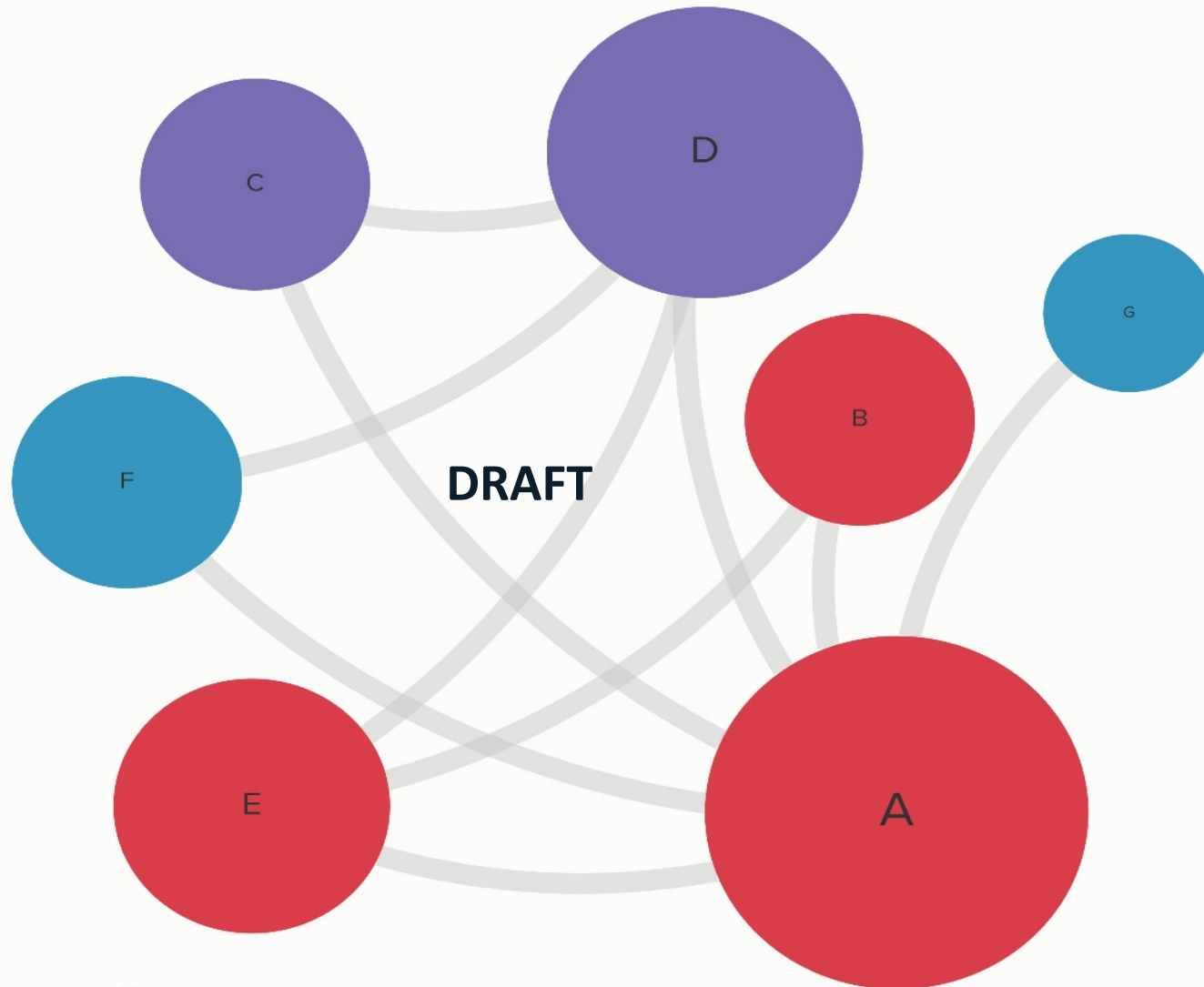# Organizational Network Analysis – Contact Frequency

DRAFT
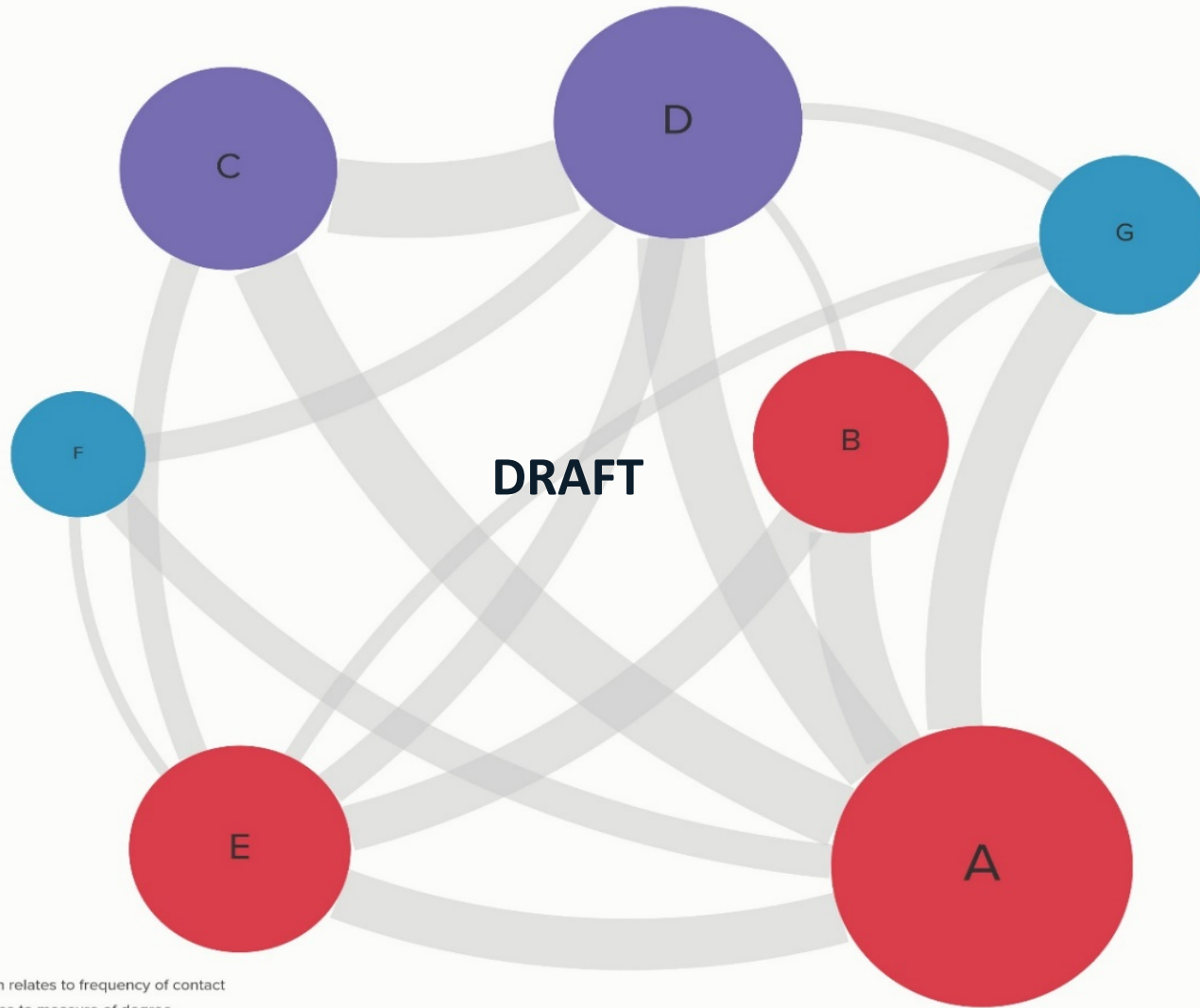
Legend
- 🔴 Government
- 🟣 Non-profit
- 🔵 Industry
- Size of connection relates to frequency of contact
- Size of node relates to measure of degree

Organizational Network Analysis – Productivity

Legend
- Government
- Industry
- Non-profit
- Darker green=more productive
- Size of node relates to measure of degree

Organizational Network Analysis – Resource Sharing

Products and Future Work

- **Products:**

  – Detailed maps describing the structure of organizational networks in four leading cities

  – Three academic papers:

    • Evenson, K. R., LaJeunesse, S., & Heiny, S. (2018). Awareness of vision zero among United States' road safety professionals. *Injury Epidemiology, 5*, 1-6. doi:10.1186/s40621-018-0151-1.

    • LaJeunesse, S., Heiny, S., Evenson, K. R., Fiedler, L. M., & Cooper, J. F. (in press). Diffusing innovative road safety practice: A social network approach to identifying opinion leading U.S. cities. *Traffic Injury Prevention*.

    • Naumann, R. B, Heiny, S., Evenson, K. R., LaJeunesse, S., Cooper, J. F., Doggett, S., & Marshall S. W. (under review). Organizational networks in road safety: Case studies of U.S. Vision Zero cities. *Journal of Urban Health.*

- **Informing Future Work:**
  – technology transfer through engagement with opinion-leading cities
  – organizational self-assessment toward enhancing workforce relationships and networks