Mapping Translational Research Collaborations: Insights from an IDeA Clinical and Translational Research Center

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INTRODUCTION

Policy makers are interested in understanding scientific collaborations that translate knowledge into population health. The objective of this study is to compare the translational research collaboration of the Hispanic Alliance of Clinical and Translational Research in 2020 and 2023 by using cutting-edge Social Network Analysis (SNA) to identify key influencers and emerging trends. In this presentation we aim to showcase the impact of network analysis on identifying gaps and improving outcomes and system performance.

METHODS/ STUDY POPULATION

We conducted a systematic document review of all the Hispanic Alliance Calls for Pilot Projects from 2020 to 2023 including key attributes of the investigators and collaborators (e.g., academic institution, highest degree, collaborator type). Scientific collaboration was defined as two or more researchers working together in grant proposal for a pilot project application. Study data was recorded and tracked using an Excel spreadsheet. R-Statistical software was used to analyze and map the networks resulting from collaboration interactions comparing 2020-2023 Calls. Network statistics were performed including nodes, isolates, edges, components, density, diameter, average degree, and the size of the main component.

RESULTS

Within a vibrant network comprising 134 investigators, clinicians (49.3%) and basic researchers (25.4%) are predominant. Initial findings showcase a remarkable surge in interdisciplinary collaborations and affiliations over time. Notably, the number of translational research clusters surged from 4 to 13, with mentorship emerging as a critical conduit bridging diverse research clusters; 16 to 65 nodes in comparison from 2020 to 2023.

Table 1. Network Statistics

Measure	Network		
	2020-2021	2021-2022	2022-2023
Nodes	16	53	65
Isolates	0	0	0
Edges	12	44	53
Density	0.10	0.03	0.03
Average Degree	1.50	1.66	1.63
Diameter	2	3	4
# of Clusters	4	9	13
Mean Cluster Size	4	6	5

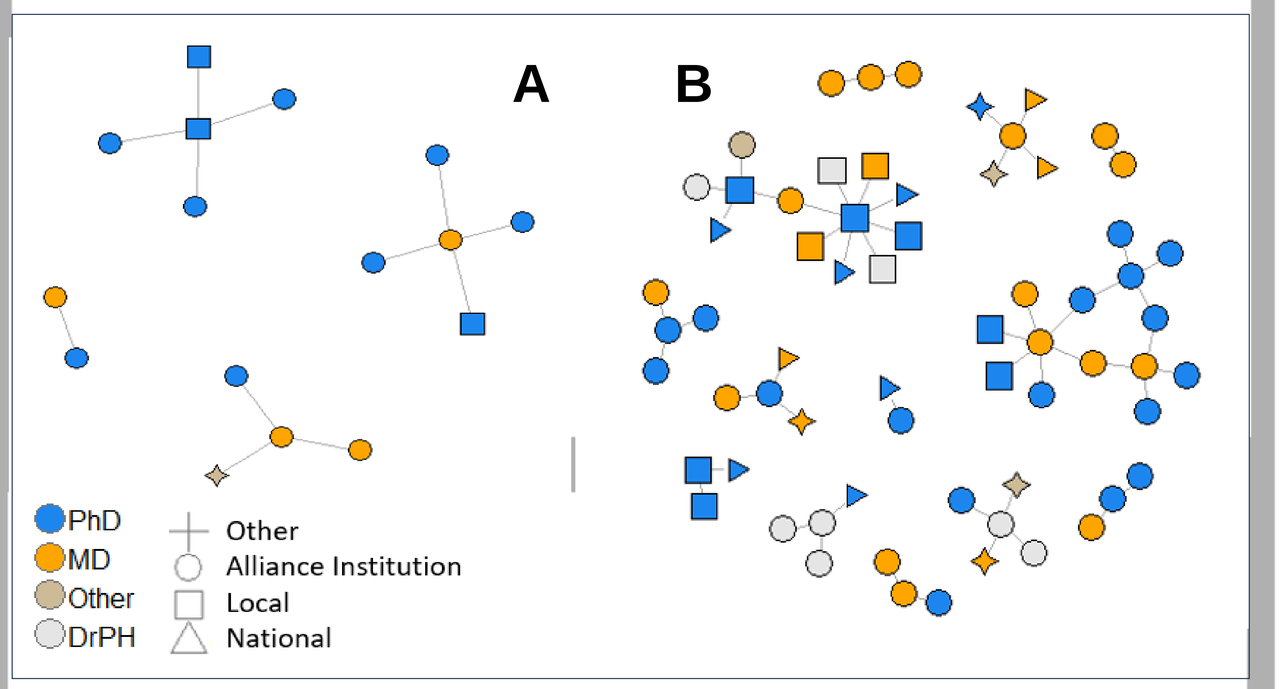

Fig.1 Multidisciplinary and Institutional Collaborative Network
(A) Network for 2020-2021 (B) Network for 2022-2023
Every shape (node) represents a single investigator color coded by highest degree and shape by institutinal affiliation. Lines (edges) that connect the investigators (nodes) represent a shared grant proposal for a pilot project.

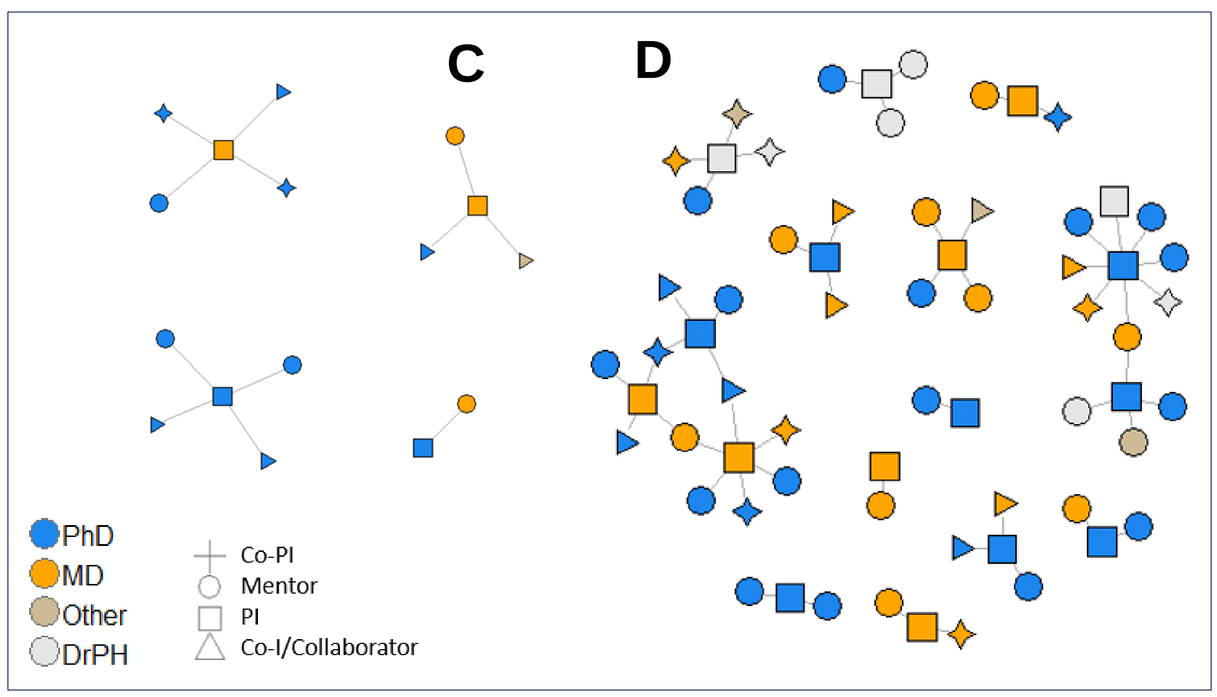

Fig.2 Multidisciplinary and Type of Collaborator Network
(C) Network for 2020-2021 (D) Network for 2022-2023
Every shape (node) represents a single investigator color coded by highest degree and shape by type of collaborator. Lines (edges) that connect the investigators (nodes) represent a shared grant proposal for a pilot project.

DISCUSSION

- This study provides critical data to mapping the IDeA CTR translational research collaboration patterns. Research collaboration increased across time.
- SNA revealed significant trends over the study period, indicating an increase in the diversity of disciplines, type of collaborators and affiliations among collaborating researchers.
- The rise in the number of nodes and edges in the collaboration network, along with the expansion of translational research clusters, suggests a positive trajectory towards fostering interdisciplinary collaborations and knowledge translation.
- The identification of a key mentor bridging multiple research clusters highlights the importance of mentorship in facilitating collaboration and knowledge dissemination.
- This innovative approach serves to foster data-driven decision-making to enhance collaboration, diversity, and program outcomes. It offers valuable insights for policy and practice.

ACKNOWLEDGEMENT

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