Okraku, T. K., Sciabolazza, V. L., Vacca, R., & McCarty, C. (2017). A mixed method approach for identifying emerging fields and building collaborative teams: Leveraging network ethnography to design experimental interventions. Ethnographic Praxis in Industry Conference Proceedings, 2017(1), 177-196. <https://doi.org/10.1111/1559-8918.2017.01146>This article by Okraku et al. presents a comprehensive mixed-method approach combining network ethnography and social network analysis (SNA) to identify and track emerging scientific fields, enhancing collaboration within these areas. The authors emphasize the synergistic integration of organizational trends analysis and ethnographic insights, thereby improving model fit and designing experimental interventions for new teams in emergent fields. Their methodology addresses the challenges posed by conventional unidisciplinary collaborations, which often result in knowledge silos, by promoting interdisciplinary partnerships.

The authors underscore the significance of departments in shaping scientific collaboration networks and the impact of factors like spatial proximity, homophily, and transitivity. This article is particularly relevant to our research, as we aim to understand and interpret social network metrics better, focusing on the cultural context of scientific collaboration at universities. Our interest in interdisciplinary research aligns with the authors' approach to disrupting traditional disciplinary compartmentalization.

Okraku et al. also delve into the operationalization of cross-disciplinary communities, using the Louvain method for community detection, and highlight the importance of tracking these communities to discern emerging scientific fields. Their approach to defining and identifying emergent research communities offers insights into our objective of understanding historical research communities and exploring the potential of network treatment groups to foster novel collaborations.

Furthermore, the article discusses the value of combining qualitative and quantitative methods, resonating with our aim to blend these approaches for a comprehensive analysis of network structures. The article’s reference to translational science provides a framework for our study, particularly in understanding the translation and dissemination of scientific knowledge.

The authors' method of profiling researchers within identified communities, though not directly replicated in our research, presents a valuable methodology for future phases of our project. The concept of a network intervention, including the formation of treatment and control groups, also offers intriguing possibilities for our research, particularly in the context of identifying and influencing subgroups within scientific communities.

the researchers delve into the dynamics of 'core' and 'bridge' communities within scientific collaboration networks, emphasizing the distinct characteristics of these groups. Core communities, with dense connections among a small group of investigators, contrast with bridging communities, which span broader sections of the network with sparser connections. This distinction is particularly noteworthy for our research in understanding the nature of interdisciplinary collaborations and the formation of diverse research teams.

The study also highlights the pivotal role of mentorship in fostering stable research communities. Mentors and mentees not only sustain strong collaborative bonds but also facilitate the introduction of new collaborators and ideas. This aspect resonates with our network treatment, which includes a mentoring component, underlining the importance of mentorship in shaping collaborative norms and practices.

The authors further explore the motivations behind scientific collaborations, emphasizing intellectual curiosity and the long-term rewards of interdisciplinary work. This perspective aligns with our interest in understanding the drivers of collaboration, particularly in the context of interdisciplinary team science. The challenges outlined in the article, such as differing expectations and disciplinary norms, are critical considerations for our study.

Okraku et al. also address the limitations of network analysis in capturing the nuanced dynamics of scientific collaboration, suggesting the integration of diverse data sources like grant applications and conference presentations. This approach could provide a more comprehensive view of collaborative networks, which is relevant to our methodology in understanding the breadth and depth of research communities.

Interestingly, the article discusses how researchers perceive their collaboration networks and the variability in defining research communities. This variability underscores the complexity of accurately visualizing and understanding scientific collaboration, which is crucial for our research in mapping network structures and dynamics.

The study concludes by emphasizing the subjective nature of community detection algorithms and the importance of ethnographic methods in creating more realistic models of collaboration networks. This insight is invaluable for our research, as it highlights the need to consider the subjective elements in network analysis and the ethical challenges in designing network interventions.

In summary, Okraku et al.'s article provides a rich and nuanced understanding of scientific collaboration networks, combining network ethnography and social network analysis. The insights gained from this study are instrumental for our research in exploring the dynamics of scientific collaboration, the role of mentorship, the motivations behind interdisciplinary work, and the complexities in mapping and understanding research communities. This comprehensive approach aligns well with our goal of developing a nuanced understanding of network structures and cultural contexts within academic settings.