Enhancing Collaborative Research in FSU ISLT: A Social Network Analysis of Research Partnerships

Sania Vanessa, Jaden Manevich, Dr. Vanessa Dennen
College of Education, Health, and Human Sciences

Introduction/Background

- Research collaboration is a vital component of academic success, fostering resource sharing, and interdisciplinary breakthroughs.

- A comprehensive survey conducted by Dr. Dennen captured common research interests, the frequency and quality of scholarly interactions, and areas where potential collaborations are lacking.

- Objective was to investigate how social network analysis (SNA) can serve as a powerful tool to discover hidden patterns in research collaboration within the ISLT department at Florida State University.

- By mapping the connections among graduate students and faculty using carefully constructed sociograms, the study identifies both the strengths and gaps in existing collaborative practices.

- The analysis focuses on identifying common research interests, the frequency and quality of interactions, and highlighting areas where potential collaborations are absent.

- Preliminary findings provide a clear picture of current research partnerships, setting the stage for data-driven recommendations to enhance communication and collaborative efforts.

- Conclusions from this study are intended to benefit all academic institutions by offering data-driven recommendations for enhancing the communication/collaboration within their respective departments.

- Aim to contribute to the evolution of academic collaboration through targeted strategies in an era where interdisciplinary partnerships are increasingly essential.

Methods

- Participants
  - Study involved graduate students and faculty from the ISLT department at Florida State University
  - A total of 64 participants were recruited and grouped into four cohorts (12–20 participants per cohort)
  - Participants were invited via email and departmental announcements, provided electronic consent, and were free to withdraw at any time
  - All responses were anonymized to protect privacy and sensitive information

- Materials/Measures
  - An online survey was designed to gather quantitative and qualitative data on collaboration patterns
  - The survey was pilot-tested with a small group of graduate students to ensure clarity and relevance
  - Survey content included: demographics, frequency of collaborative activities, scholarly/topical interests, and their perception of the department's current state of collaboration

- Procedures
  - An invitation email containing the survey link was sent to all potential participants with the survey
  - It was accessible for two weeks and could be completed using various devices
  - Institutional Review Board approval was obtained prior to data collection and all collected data was stored on a secure, password-protected server
  - Completed survey responses were downloaded and organized and a codebook was created for both numeric and open-ended responses; the incomplete ones were used if at least 70% was answered

- Data Analysis
  - Descriptive statistics summarized participant demographics and collaboration frequencies
  - Open-ended responses were coded to identify common themes (e.g., barriers to collaboration, suggestions for improvement)
  - The qualitative themes were combined with the SNA metrics to illustrate how collaboration occurs within the department
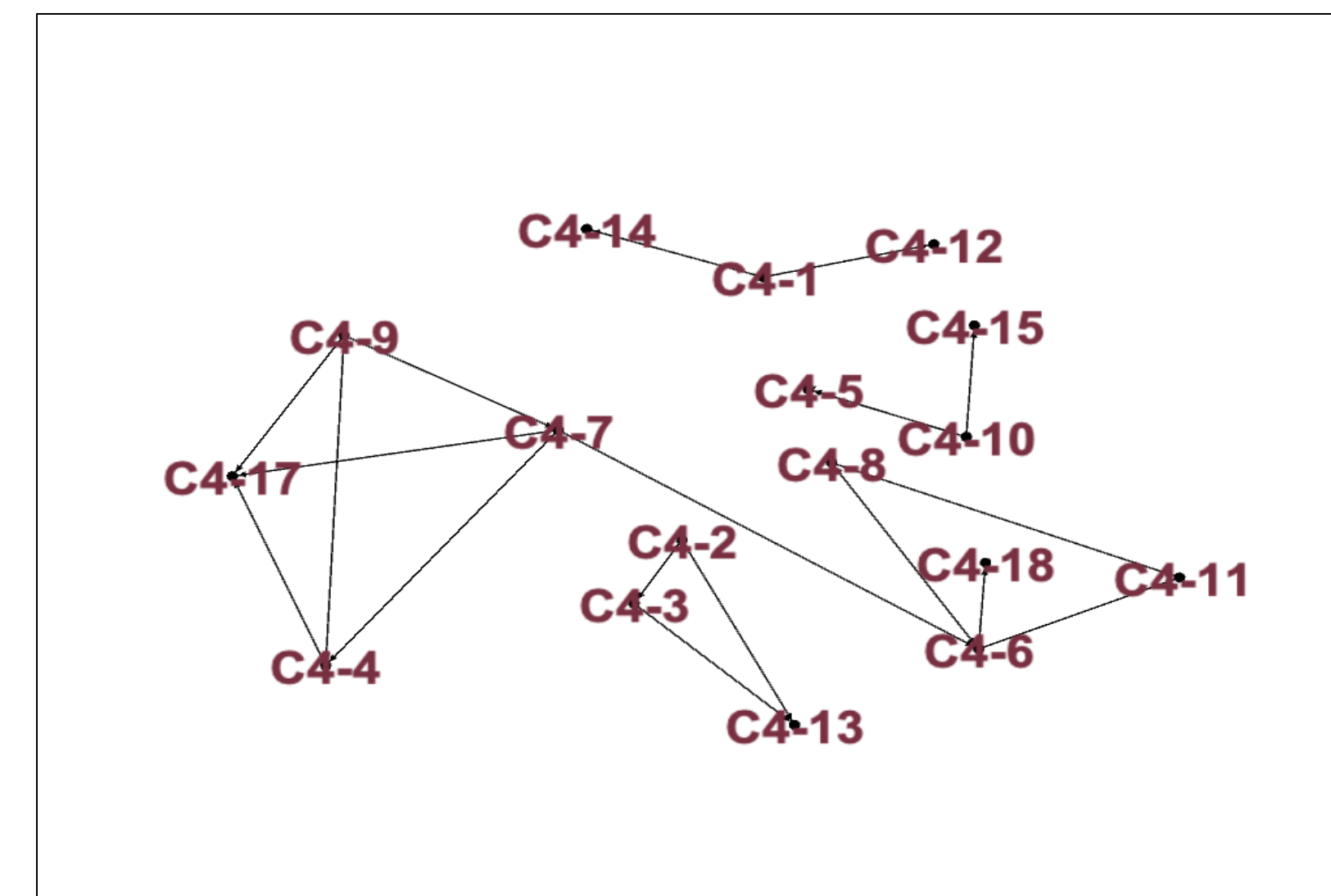

Figure 1. Sociogram illustrating collaboration patterns among Cohort 4 participants. Nodes represent individuals, and lines indicate collaborative research ties. Notice central "hub" individuals who connect multiple peers, highlighting both active collaboration and opportunities to strengthen less connected members.
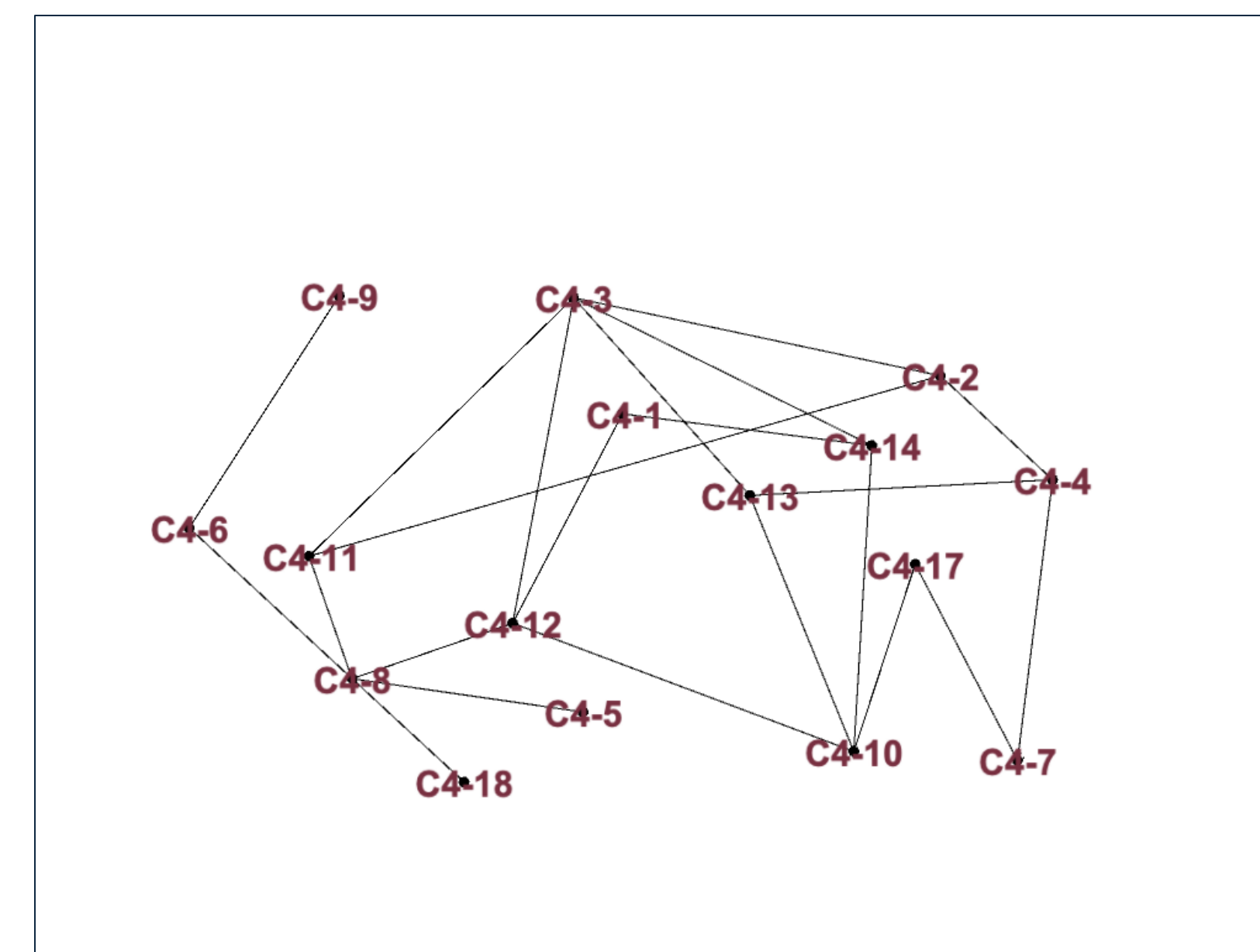

Figure 2. Sociogram illustrating shared scholarly interests among Cohort 4 participants. Clusters indicate common areas of interest (e.g., organizational learning), revealing opportunities to foster collaboration through targeted networking initiatives.
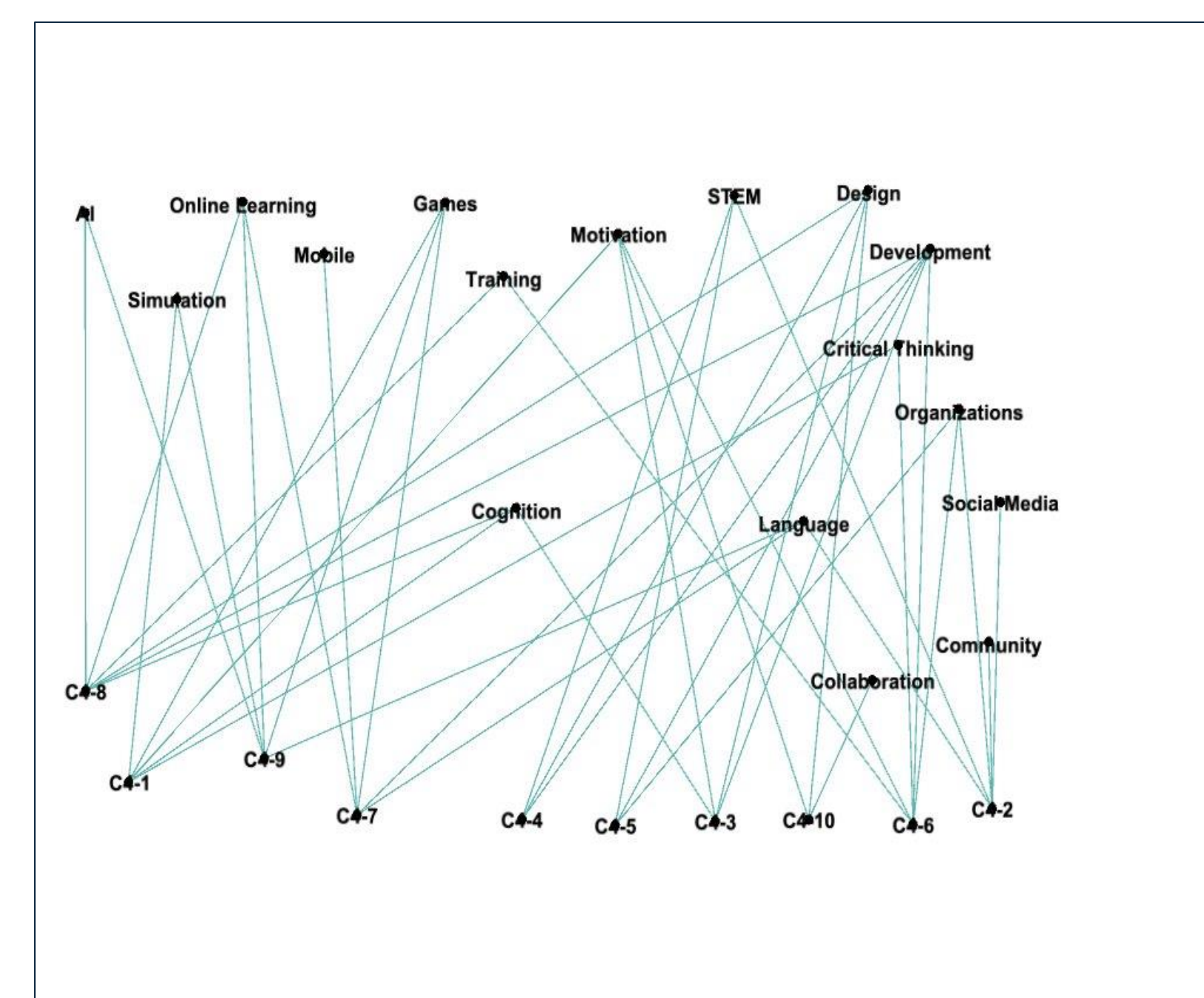

Figure 3. Two-mode network depicting Cohort 4 participants. Connections indicate an individual's interest in specific topics. Clusters highlight shared interests, suggesting potential opportunities to foster research collaborations based on common themes

Results/Conclusions

- Analyses reveal that collaborative efforts are concentrated around a few pivotal "hub" individuals, who act as connectors between amateur and more experienced researchers.

- The degree distribution (average number of connections) reported in Cohort 3 was approximately 1.750 for Collaborations, 3.350 for Scholarly Interests, and 3.800 for Topical Research Interests.

- The degree distribution reported in Cohort 4 was 1.353 for Collaborations, 2.875 for Scholarly Interests, and 3.259 for Topical Research Interests.

- Some respondents reported no collaborative activity while the majority listed a few collaborators—primarily these central hubs—indicating a heavy reliance on a small group.

- Many participants shared scholarly interests with peers, establishing an informal support network that can evolve into formal collaborations.

- There was high interest in boosting collaboration, though satisfaction with current efforts varied, highlighting untapped potential for stronger partnerships and resource sharing.

- Understanding the disparity between expressed collaboration interest and actual engagement signals a need for cultural and structural shifts within the department.

- By highlighting shared research interests, this study provided a foundation for interdisciplinary initiatives that can lead to novel research approaches and breakthroughs.

Future

- Organize topic-specific workshops and networking sessions to connect individuals with similar research interests and facilitate new collaborations.

- Develop or adopt online tools (e.g., dedicated forums or collaboration apps) to enable continuous dialogue and resource-sharing among cohort members.

- Establish formal mentorship initiatives that pair less-connected participants with central "hub" individuals to foster guidance and expand research partnerships.

- Encourage faculty to proactively reach out to students and colleagues by hosting open research group sessions and promoting co-authorship opportunities.

- Advocate for dedicated administrative resources that nurture a research-friendly environment, facilitate inter-cohort interactions, and help secure funding for collaborative projects.

- Implement periodic surveys and focus groups to monitor collaboration trends, identify emerging barriers, and adjust initiatives for maximum effectiveness.

Acknowledgements

References

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