

TEAM SCIENCE & COLLABORATION
MCUAAAR MINI-SESSION
DR. AMANDA WOODWARD
10/9/2024



School of Social Work
MICHIGAN STATE UNIVERSITY



OUR SCIENCE **TRANSFORMS THE HUMAN EXPERIENCE**
AND INSPIRES LEADERS



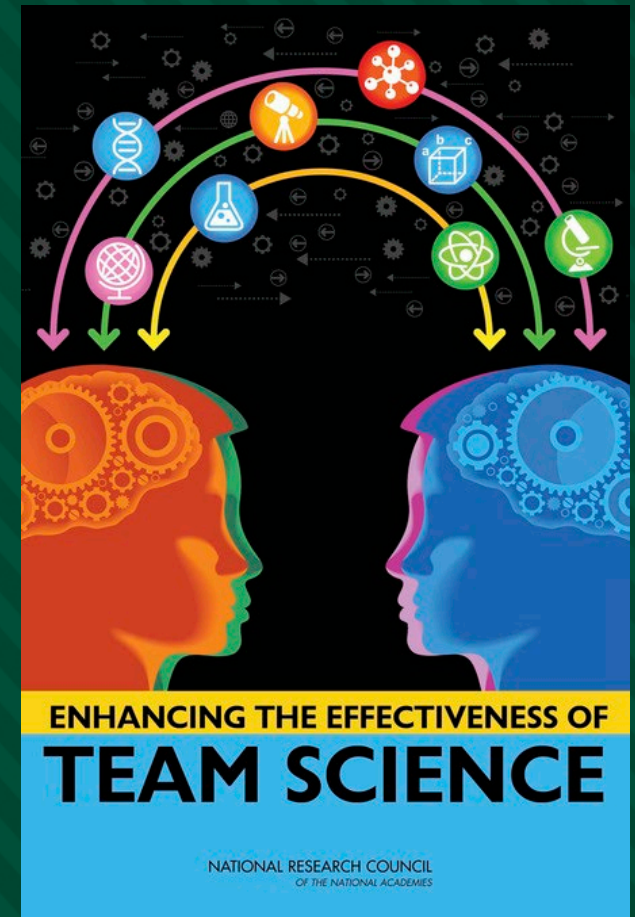
The plan . . .

- Today
 - What is team science?
 - The benefits and challenges
 - Research related to
- 10/16 seminar
 - Strategies for doing it effectively



Team science

“Scientific collaboration, i.e., research conducted by more than one individual in an interdependent fashion, including research conducted by small teams [2 to 10 individuals] and larger groups [more than 10]”



Committee on the Science of Team Science, Board on Behavioral, Cognitive, and Sensory Sciences, Division of Behavioral and Social Sciences and Education, & National Research Council. (2015). *Enhancing the effectiveness of team science* (N. J. Cooke & M. L. Hilton, Eds.). National Academies Press (US). <https://doi.org/10.17226/19007>



TABLE 1-1 Dimensions of Team Science

Dimension	Range	
Diversity of Team or Group Membership	Homogeneous	Heterogeneous
Disciplinary Integration	Unidisciplinary	Transdisciplinary
Team or Group Size	Small (2)	Mega (1000s)
Goal Alignment Across Teams	Aligned	Divergent or misaligned
Permeable Team and Organizational Boundaries	Stable	Fluid
Proximity of Team or Group Members	Co-located	Globally distributed
Task Interdependence	Low	High



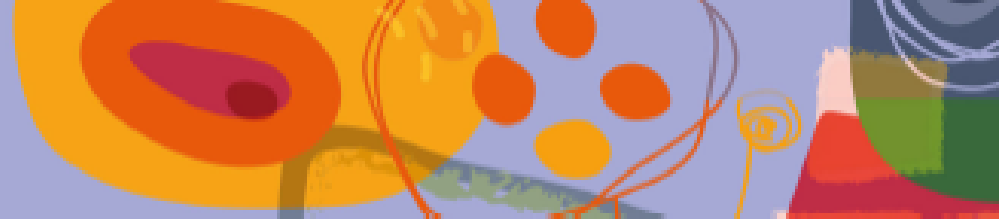
Benefits

- Multidisciplinary perspectives – different ways of thinking to address an issue
- Productivity – more pubs, more grants through division of labor
- Wider impact – broader scope of dissemination in terms of scholarly outlets and translation to other formats applicable to practice and policy
- Ideas extended/replicated through follow-up, spin-offs, other work by collaborators
- Mentoring



Challenges

- Multidisciplinary perspectives – different norms and expectations about collaboration, dissemination, styles of leadership
 - Test run w/prospective collaborators
- Time and effort required for coordination (working w/multiple co-authors)
- Communication around team roles and responsibilities
 - Defining roles up front
 - Consider now, but also possible evolution
 - Regular meetings (well organized, productive)
- Fit to context, RPT expectations



<https://www.nature.com/articles/s41599-021-00789-8>

ARTICLE



<https://doi.org/10.1057/s41599-021-00789-8>

OPEN

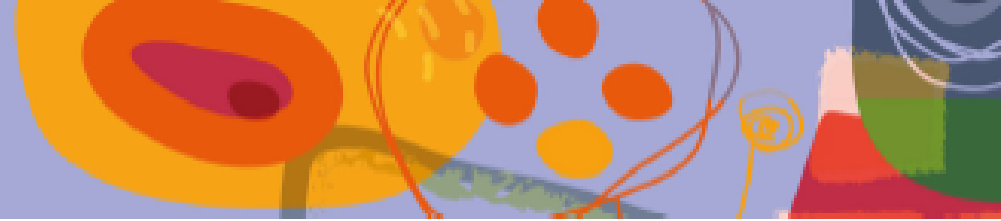
Interpersonal relationships drive successful team science: an exemplary case-based study

Hannah B. Love ¹, Jennifer E. Cross ², Bailey Fosdick ², Kevin R. Crooks², Susan VandeWoude² & Ellen R. Fisher³

Used social network surveys, participant observation, focus groups, interviews, and historical network data to look at the development and evolution of a successful team of scientists over 15 years.

Designated exemplary based on:

1. a range of outcomes (e.g., grants, pubs, presentations, grad students and postdoc trained),
2. the interdisciplinary nature of the team,
3. the 15-year history of the team and how it evolved from project to project,
4. the way it combined elements of research, teaching/training, and extension/engagement,
5. the way it effectively onboarded and integrated new members.



<https://www.nature.com/articles/s41599-021-00789-8>

ARTICLE



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A selection of key findings:

- Process and interactions – built through taking the time to create a shared language and vision through mentoring and advice networks – helped fuel and were intertwined with scientific productivity.
- When asked what personal and professional skills respondents learned from being a member of the team, 82% of open-ended responses were about tacit vs tangible skills (e.g., managing interpersonal conflict, communication with practitioners, leadership, networking across disciplines, developing and nurturing interpersonal relationships, diversity of opinions).
- They used vertically integrated training mentoring both top down and bottom up.
- Collaborators included community partners and practitioners which increased overall impact on policy and practice.



A few other readings:

- DeHart, D. (2017). Team science: A qualitative study of benefits, challenges, and lessons learned. *The Social Science Journal*. <https://doi.org/10.1016/j.soscij.2017.07.009>
- Forscher, P. S., Wagenmakers, E.-J., Coles, N. A., Silan, M. A., Dutra, N., Basnight-Brown, D., & IJzerman, H. (2023). The Benefits, Barriers, and Risks of Big-Team Science. *Perspectives on Psychological Science*, 18(3), 607–623. <https://doi.org/10.1177/17456916221082970>
- Patel, M. M., Moseley, T. W., Nia, E. S., Perez, F., Kapoor, M. M., & Whitman, G. J. (2021). Team science: A practical approach to starting collaborative projects. *Journal of Breast Imaging*, 3(6), 721–726. <https://doi.org/10.1093/jbi/wbab034>

A close-up, high-angle shot of a dark-colored dog's face, looking directly at the camera. The dog has dark brown or black fur with some lighter brown patches around its eyes. Its eyes are large and dark, with a slight reflection. The background is dark and out of focus.

**Questions or
comments?**