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Embracing nonlinearity: A nuanced perspective on team science competency development

Tara Truax, Patricia Piechowski, Knoll Larkin, Bethany Laursen, Elias Samuels, Inna Smirnova, Shira Washington and Katarzyna Wilczek

Michigan Institute for Clinical & Health Research, University of Michigan, Ann Arbor, MI, USA

Letter

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Corresponding author:
P. Piechowski; Email: kwikwi@umich.edu

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In their recent article, Mendell and colleagues deepen our understanding team science (TS) competencies for team participants: (1) trainees/faculty, (2) clinical research professionals, and (3) community partners [1]. The authors' insights conclude that competency development for community partners is more nonlinear than for the other two groups. We argue for many team roles, beyond community partners (e.g. experts by experience), TS competencies develop nonlinearly, fluctuating greatly by career stage, professional goals, and life experiences. Further, not every team effort requires mastery of every TS competency. We suggest expanding the nuanced approach that Mendell and colleagues recommend taking with community partners to all members of the team and the team overall [1]. Assessing current and desired skills for each team will both support the professional growth of individual members and ensure the team meets its specific goals.

In TS, each team member contributes their unique skills and background to their research teams, enhancing the team's capacity to tackle scientific challenges [2]. These skills and backgrounds develop through diverse career and life trajectories for team members, not just community partners. This will be increasingly true as the academy diversifies, and new team structures emerge. For example, hybrid team roles like that of Community Health Workers (who are both community partners and clinical research professionals) demand specialized competencies that can differ significantly from the traditional academic research team roles as divided by Mendell and colleagues [1].

Synergy of team member competencies can advance the team's scientific ambitions if matched to the needed tasks. For instance, in a large interdisciplinary research center, exemplary competency in managing interdisciplinary teams is crucial. This competency could be centralized in an individual or a group of directors (consisting of faculty and clinical research professionals, or community partners) with hybrid roles, each contributing different managerial expertise. In contrast, a small interdisciplinary project may not need this expertise to the same degree.

Team members learn via interaction [3], developing team-level competencies including communication and collaborative problem-solving skills. Balancing individual learning with the team's progress requires a culture of open communication, shared goals, and reflection, enabling both individual and team competencies' growth.

Considering how competencies develop through social learning, how project goals can vary, and how individual roles, skills, and aspirations are complex and dynamic, we suggest assessing both individual- and group-level competencies against the needs of a particular project. This could be done by creating a **team development plan** as the team starts and revisiting as the team evolves. This plan, informed by Lotrecchiano *et al.* [4]. and Mendell *et al.* [1], should align with individual development plans and highlight competency growth at the team level, tailored to the needs of that project.

By focusing on competency assessment, development, and maintenance across the team for a particular project, TS will be reinforced through a collective effort that acknowledges and supports all members, including those in complex, hybrid roles. An integrated tool, like a team development plan, could facilitate a more equitable and dynamic research environment that emphasizes collective progress and achievement.

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