

A Dynamic Social Network Analysis of an NIMH Funded ALACRITY Center: Examining Change in Collaboration Over Time

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Background

- The Implementation Science and Team Effectiveness (IN STEP) center is a NIMH-funded P50 Advanced Laboratory for Accelerating the Reach and Impact of Treatments for Youth and Adults with Mental Illness (ALACRITY).
- IN STEP aims to accelerate the efficiency and impact of evidence-based practices in public services for children with mental health needs by integrating team effectiveness research (TER) with dissemination and implementation (D&I) science.
- The Center provides the infrastructure to conduct a series of research projects involving investigators, trainees, and staff with different expertise.
- Center members complete an annual survey measuring each member's contact, collaboration, and mentorship with all other members.
- The annual member survey assesses Center reach, impact, and collaborative potential.
- The goal of this project is to (1) understand how members' contact, collaboration, and mentorships are changing over time (3 year), and (2) identify if the changes align with the overarching goals of the Center (i.e., to produce research products; integrate different forms of expertise; to train the next generation of researchers).

Method

- Center members (n = 68) completed a round-robin questionnaire to assess contact, collaboration, and mentorship
- Longitudinal social network analysis was used to predict the formation of collaborations between members with shared roles, expertise, or project participation (i.e., homophily)
- Projects included the Signature R01 Project, Developmental Projects (P1, P2, P3), and Pilots that were initiated at different years
- Expertise relevant to Center aims was coded for each member - TER, D&I, Methods, and Children's Mental Health (CMH); Role included investigator and trainee

Predicting Formation of New Collaborations from 2021 - 2024

Role	New	Prez	Pub	Grant	Any
Inst/Trn	-0.08	0.02	0.47	0.14	-0.18
<i>Center –Relevant Expertise (not mutually exclusive)</i>					
TER	0.95***	1.34***	1.33*	2.26*	0.91***
D&I	0.72***	0.46*	0.47	0.37	0.87***
Methods	0.09	-0.05	0.49	-0.27	0.22
CMH	1.01***	0.90***	0.94**	-0.21	1.24***
<i>Project Involvement (not mutually exclusive)</i>					
Sig R01	1.63***	1.72***	2.03***	0.75*	1.68***
Dev P1	0.13	-0.21	-0.62	-0.62	0.08
Dev P2	0.64**	0.46	0.45	-0.55	0.54**
Dev P3	-0.53*	-0.57*	-0.78*	-1.01*	-0.48*
Pilots	0.66***	0.74**	0.15	0.48	0.69***

Note: *, **, and *** respectively indicate $p < .05$, $.01$, $.001$

Center-Relevant Expertise

<i>Initial Role in the Center</i>	
<i>Trainee</i> (37)	<i>Investigator</i> (31)
TER	3 (8%)
D&I	11 (30%)
CMH	31 (84%)
Methods	0 (0%)
	12 (39%)

Predicting Transition from Trainee to Investigator

<i>Predictor</i>	<i>Coef</i>
Pub at T1	0.19
<i>Change</i> Pub from T1 to T2	0.60*
Time in IN STEP	0.67
R01	-1.80
Pilots	1.64

Note: * indicates $p < .05$

6/24 (25%) of trainees transitioned to investigator

Results

- Center members formed new contacts, collaborations, and mentorships across 2021 - 2024.
- Center members tended to be more likely to collaborate if they shared common expertise, or were on the same project.
- Projects that unfolded earlier (R01) and with larger teams formed new collaborations in years 1-3.
- Trainees that published more with center members were more likely to transition to investigator.
- Those with common expertise may have collaborations outside of the Center.

Conclusion

- The annual survey indicates that the IN STEP center is progressing toward its goals via increased collaboration on projects
- In future years as new projects are generated from current projects, greater integration of differing expertise is expected.

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