Tracking Translational Collaborations and Activities at the UIC CCTS

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Evaluation & Research Questions

- 1. Who is conducting translational research at UIC?
- 2. What CCTS services do translational scientists and researchers at UIC utilize?
- 3. What are the collaboration patterns of translational scientists and researchers at UIC?

Non-translational

Scientists & Posparchors

Table 1. Composition of Respondent Sample

Table 2. Frequencies for Full Sample & Translational

1. Who is conducting translational research at UIC?

The 2010 Annual Survey asked respondents about the types of research they conduct. Specifically, we asked if they conduct "translational" research—defined as "(1) The process of applying discoveries generated during research in the laboratory, and in preclin developm enhancing practices 499 indiv question, conduct 77% of th accessing who repor (341), 30

Table 2 sl full surve translati researchers, outlining affiliation, position, and gender. The majority of respondents (519) have a primary affiliation with UIC, and among those, 24% self-identify as translational

in preclinical studies, to the	Scientists & Researchers		
development of trials and studies in		Full Sample	Translation
humans, and (2) Research aimed at enhancing the adoption of best practices in the community". Of the 499 individuals who responded to that question, 135 (27%) indicated they conduct translational research, and	AFFILIATION UI-Chicago UI-Urbana-Champaign UI-Peoria UI-Rockford Jesse Brown VA Medical Center Advocate Health Care Other TOTAL	519 16 22 10 9 6 31 613	122 3 1 4 0 0 8 138
77% of those researchers reported	POSITION/RANK	013	130
accessing CCTS services. Among those who reported using CCTS services (341), 30% are translational researchers.	Tenured or tenure-track faculty Clinical or clinical-track faculty Research or research-track faculty Clinician Staff	186 94 65 22 68	79 11 20 2 8
Table 2 shows the frequencies for the full survey sample and self-identified translational scientists and	Postdoc Doctoral student Other TOTAL	54 48 54 591	5 9 4 138

researchers. Among respondents who indicated they do translational research, 88% have their primary affiliation with UIC, and 6% work at other U of I campuses.

About one-third (186) of respondents are tenured or tenure-track faculty; 41% of whom report doing translational research. Sixteen percent (94) of respondents are clinical or clinical-track faculty, and 12% of those clinical faculty conduct translational research. Among those who reported doing translational research, 57% are tenure or tenure-track faculty, 8% are clinical or clinical-track faculty, and 14.5% are research or research-track faculty. More than half of survey respondents were women (57%); 43% were men. Seventeen percent of the female respondents and 27% of the male respondents report doing translational research. Among those who reported doing translational research, about 55% are male.

2. What CCTS services do translational scientists & researchers at UIC utilize?

We asked survey respondents who self-identified as translational researchers and scientists which services they had used in the previous year. As noted in Figure 1, the most commonly accessed service or resource was attending a CCTS event: 51% of self-identified translational researchers and scientists reported having done so. Twenty-one percent of translational scientists reported

stance in partnering w/community member or clinician			
Used the CCTS Clinical Research Center			
Used CCTS technology resource			
Study design assistance			
Regulatory/IRB assistance			
Attended CCTS event			
CCTS-sponsored course/training			
Other CCTS consultation services			

that they received regulatory or IRB assistance or other CCTS consultation services; 17% reported taking a CCTS-sponsored course ■ Yes or training; and 15% ■ No reported using the CCTS Clinical Research Center and receiving study design assistance.

3. What are the collaboration patterns of translational scientists & researchers at UIC?

Development of collaborative ties for clinical and translational research is a primary objective of the UIC-CCTS program. We asked respondents to provide the names of individuals with whom they collaborate and then asked a series of network questions about the translational work they do with specific collaborators. To investigate the extent to which the UIC CCTS services advance the development of collaborative ties for clinical and translational research, we compare CCTS service users with nonusers among faculty who conduct translational science and research. Collecting data annually will enable us to track the collaborative ties of translational researchers at UIC and the role that CCTS plays in enhancing those ties.

Figure 2 illustrates the "close collaborators" of respondents who both used CCTS services (red nodes) and responded that they conducted translational research. In comparison, Figure 3 illustrates "close collaborators" of respondents who used CCTS services but did not self-identify as translational researchers. The smaller number of non-translational CCTS service users in Figure 3 as compared to Figure 2 means there is some use of CCTS services by non-translational researchers. Additionally, when we compare Figure 2 with Figure 3, we see that respondents who are not engaged in translational research do not report the same types of networks as those who are translational researchers (see Figure 2). Translational researchers who use CCTS services report much denser networks of close collaborators than do those who are not translational researchers (Figure 3), indicating that the primary CCTS service recipients are members of a more integrated translational science community. Hence, it appears that CCTS is developing services that feed into the collaborative networks of translational science in the UI system.

Figure 4 illustrates the "close collaborators" of survey respondents who have not used CCTS services (blue nodes) but self-identify as translational researchers. Figure 4 provides some indication of the potential users of CCTS services who are not currently receiving services. The networks in Figure 4 appear to be less dense than those in Figure 2 (CCTS users who are translational researchers). We anticipate that as CCTS provides access to additional services for translational researchers in Figure 4, they will become more connected with the community of researchers identified in Figure 2. The Evaluation and Tracking team will continue to assess the evolution of these networks.

Figure 5 illustrates respondents who neither have used CCTS services (blue nodes) nor self-identify as translational researchers. Even among those who have not used CCTS services

Figure 2. "Close collaborators" of respondents who used CCTS services & self-identify as

themselves, several are collaborating with individuals who have received services (red nodes), indicating that the benefits of CCTS services may diffuse to a network of researchers larger than just translational researchers. We expect that over time, more collaborators of non-translational researchers will have received CCTS services.

We also are able to track the types of activities occurring in the networks of CCTS users and nonusers. Table 3 summarizes data collected about network collaborators, which indicates there are substantial differences in the relationships and activities of users vs. nonusers. For example, users are more likely to do clinical and translational research with their collaborators and are significantly more likely to report that the individuals in their networks provide clinical services. These findings provide a baseline for understanding the structure of collaborative networks of UIC researchers who use CCTS services and those who have yet to connect with the CCTS.

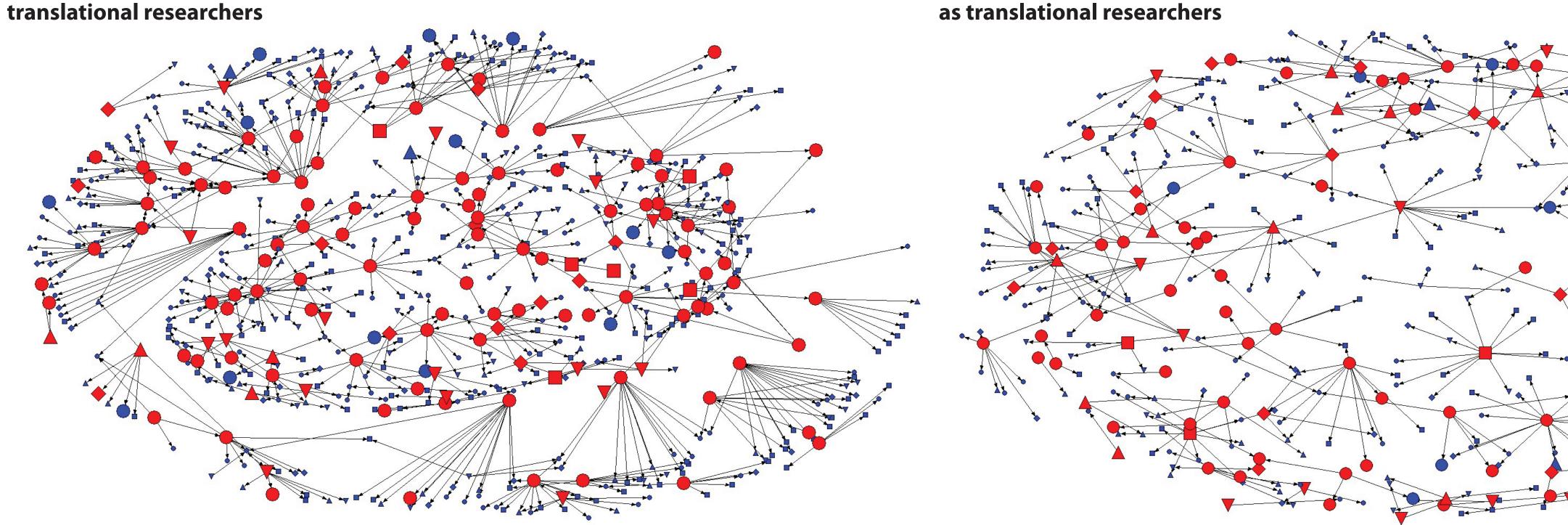
Table 4 indicates that CCTS users are significantly more likely than nonusers to report that individuals in their networks provide clinical expertise and access to facilities. When asked if collaborators in the network helped the respondent obtain support for clinical or translational research, we see no significant differences between the networks of respondents who have and have not used CCTS services. Further, CCTS users are significantly more likely to report that collaborations have led to new clinical research activity but significantly less likely to report that the collaboration changed the way they communicate about research or integrated concepts and ideas from different areas of expertise.

To some degree, these findings show that CCTS users are working with individuals in ways that share ideas, knowledge and equipment but not changing the way they do their own research. We would expect that more fundamental changes will begin to occur as the UIC CCTS matures. Additionally, these findings indicate that interactions among the users generally have important effects on clinical types of research and activities. For example, CCTS users were more likely to report developing clinical guidelines, providing clinical expertise and services, and new clinical research with their collaborators. Hence, users tend to report that their collaborations are more likely to stimulate clinical research. These findings may indicate early effects of the CCTS on clinical research.

Table 5 compares the networks of respondents who do and do not report conducting translational research. We ask, in what ways are the networks of people who self-identify as translational researchers different from non-translational researchers? Table 5 shows that for the

items measured (e.g., length of relationships, frequency of contact with collaborators, the understanding of collaborator expertise between translational and non-translational ∇ = Non-academic

Figure 3. "Close collaborators" of respondents who used CCTS services & do not self-identify as translational researchers



○ = UI faculty

 $\triangle =$ Post-doc

 \square = Non UI faculty

 $\Diamond = PhD student$

Ties = Named as "close collaborato

Figure 4. "Close collaborators" of respondents who have not used CCTS services & self-identify as translational researchers

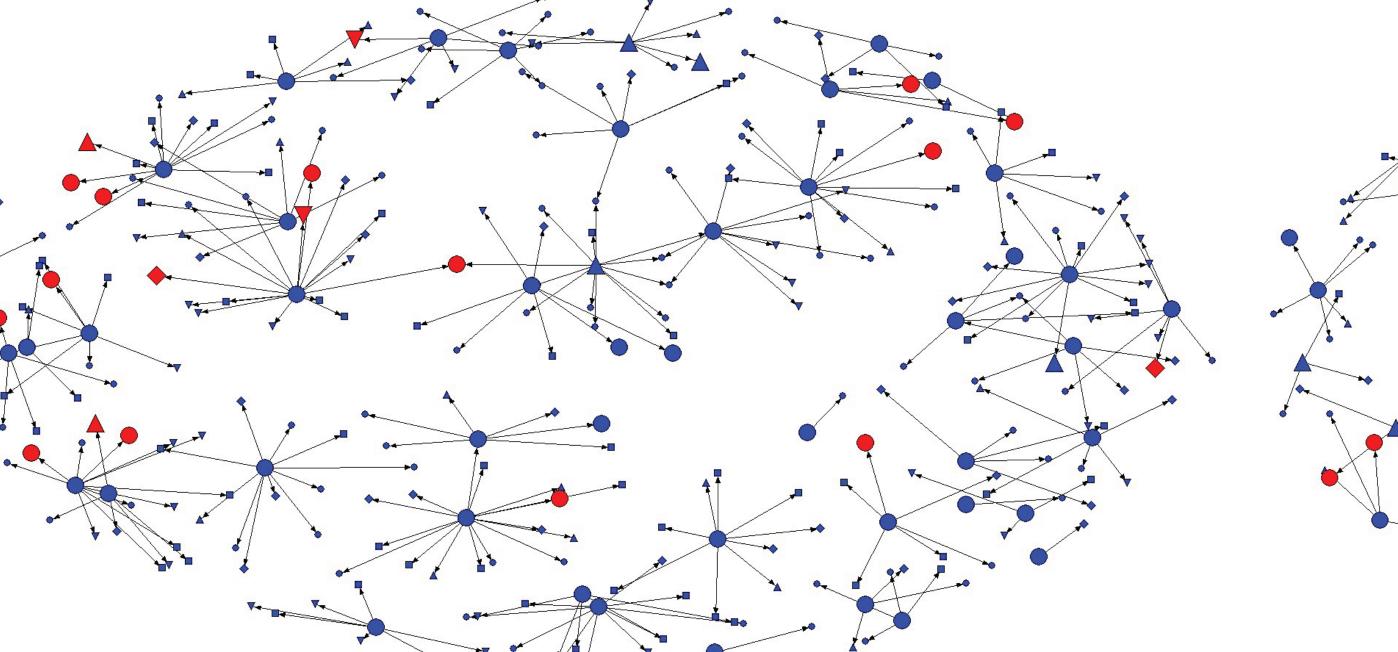
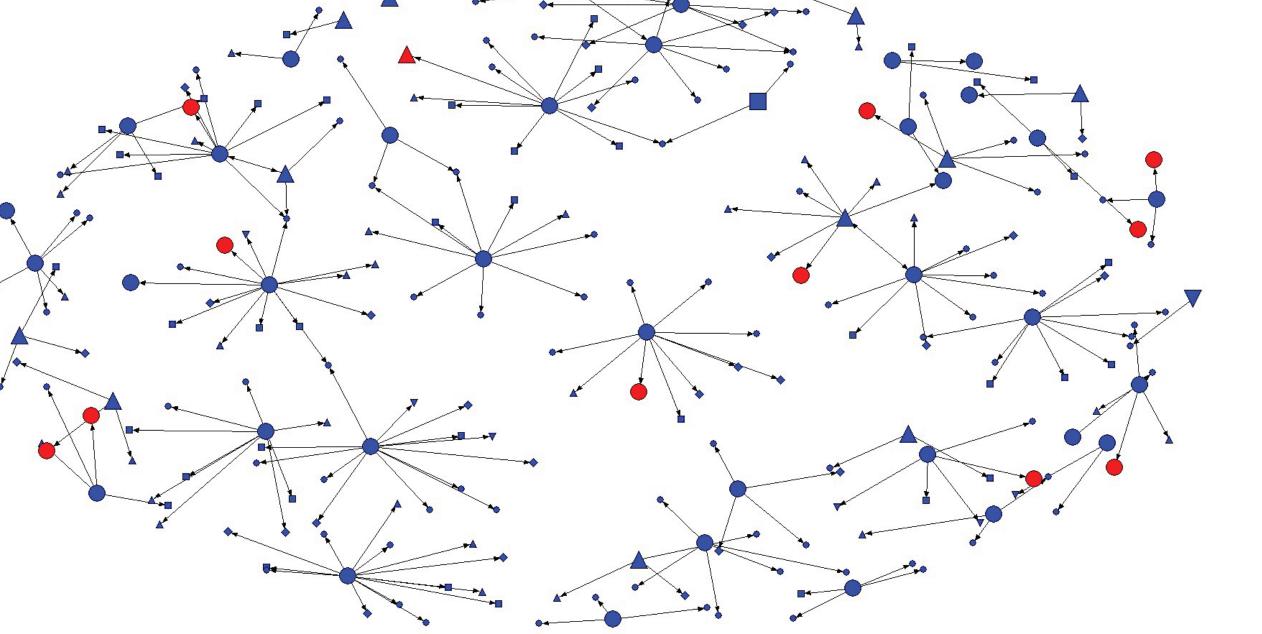


Figure 5. "Close collaborators" of respondents who have not used CCTS services & do not self-identify as translational researchers



researchers), there are no significant differences between the collaborative networks of translational researchers and non-translational researchers.

Table 6 shows that there are some important differences in the activities conducted by the collaborators of translational researchers. First, translational researchers are significantly less likely to report that their collaborators are in their discipline. Second, translational researchers are significantly more likely to report that their collaborators do clinical research and translational research. These findings indicate that, as a baseline, self-identified translational researchers have developed interdisciplinary collaboration networks with other clinical and translational researchers. Third, translational researchers report significantly more network collaborators who work in community settings and provide clinical services.

Table 7 shows the resources provided by collaborators and the results of those interactions for translational and non-translation researchers. Translational researchers are more likely to report that their collaborations change the way they communicate about research and integrate concepts and ideas from different areas of expertise; they also report that significantly more of their collaborators have helped them obtain support for clinical or translational research. Importantly, people who collaborate with translational researchers are more likely to help disseminate and interpret research for broad audiences. This clearly indicates the difference in interest and focus of translational collaborations at UIC. While there are other differences in the table between translational and non-translational researchers, it is clear that translational researchers have strong supportive ties that seem to result in a more diverse and integrative research process.

Table 3. Comparing CCTS Users' & Nonusers' Network Relationships & Activities

	CCTS	User	None	Diff. of										
COLLABORATOR	N_ties	Mean	N_ties	Mean	Means									
ls in my discipline	791	0.55	495	0.68	***									
Does clinical research	791	0.40	495	0.33	***									
Does translational research	791	0.45	495	0.38	**									
Works in community settings	791	0.18	495	0.16										
Provides clinical services	791	0.28	495	0.18	***									
p < .05, *p < .01.														
•	al networ	k tie nam	ned by ea	ch respo	$N_{\text{ties}} = 0.05, \text{ for } p < 0.01$. N_ties refers to each individual network tie named by each respondent.									

Table 4. Comparing CCTS Users' & Nonusers' Network Relationshins & Activities

	CCTS	User	Nonu	Diff. of	
	N_ties	Mean	N_ties		Means
RESOURCE(S) PROVIDED BY CO	OLLABO	RATOR			
Provided clinical expertise	781	0.30	495	0.25	*
Provided data/other inputs	781	0.64	495	0.67	
Provided access to equipment	781	0.14	495	0.12	
Provided access to facilities	781	0.16	495	0.12	**
Provided methodological or				311	
theoretical expertise	781	0.60	495	0.62	
Interpreted research for					
broader audiences	781	0.30	495	0.33	
Integrated diverse methods					
or approaches	781	0.25	495	0.26	
Helped obtain clinical/					
translational research support	764	0.24	483	0.22	
Introduced you to potential					
collaborators	764	0.24	483	0.25	
Reviewed your work prior					
to submission	764	0.21	483	0.25	**
Helped identify research					
dissemination pathways	781	0.15	495	0.20	**
Helped you translate					
research for a lay audience	781	0.12	495	0.12	
Invited you as a speaker	781	0.07	495	0.10	**
RESULT OF INTERACTION					
Changed the data you use in					
your research	764	0.15	483	0.13	
Led to new clinical research	764	0.24	483	0.12	***
Led to new types of					
interventions	764	0.12	483	0.17	**
Changed the methods you use	e 781	0.21	495	0.22	
Changed the substantive focus	S				
of your research	781	0.14	495	0.14	
Changed the way you					
communicate about your					
research	781	0.09	495	0.13	**
Integrated concepts & ideas					
from different areas of	741	2.60	474	2.02	***
expertise	741	2.68	474	2.83	***

Table 5. Comparison of Network Structure for Translational & Non-translational Researchers

	Translational Researchers (self-identified)			Non-translational Researchers (self-identified)			Diff. of
	n	Mean	SD	n	Mean	SD	Means
U of I faculty collaborators	98	2.94	1.525	72	2.86	1.532	
Faculty collaborators from outside U of I	81	2.51	1.450	45	2.22	1.444	
Postdoctoral collaborators	48	1.44	0.741	45	1.67	0.798	
PhD student collaborators	47	1.74	0.846	32	1.75	0.880	
Nonacademic collaborators	38	2.11	1.371	13	2.08	1.256	
Length of relationship with collaborator	110	2.40	0.462	86	2.29	0.562	
Frequency of contact with collaborator	110	2.56	0.370	86	3.48	1.287	
Understands expertise of collaborator	110	2.56	0.370	86	2.52	0.367	

students, & 5 nonacademic collaborators. = less than 1 year; 2 = between 1 & 3 years; 3 = more than 3 years.

NOTES: Respondents were asked to name up to 5 UI faculty, 5 external faculty, 3 postdoctoral researchers, 3 PhD

- $^{\dagger}1 = daily; 2 = a$ few times a week; 3 = weekly; 4 = a few times a month; 5 = monthly; 6 = less often than monthly. †† 1 = little to no understanding; 2 = working understanding; 3 = detailed understanding.
- p < .1; p < .05; p < .01.

Table 6. Comparison of Collaborators in the Networks of Translational & Non-translational Researchers

	Translational Researchers (self-identified)			Non R (se	Diff. of		
	n	Mean	SD	n	Mean	SD	Means
Is a close friend	790	0.19	0.39	496	0.17	0.37	
Is in my discipline	790	0.56	0.50	496	0.66	0.47	***
Does clinical research	790	0.44	0.50	496	0.28	0.45	***
Does translational research	790	0.55	0.50	496	0.21	0.41	***
Works in community settings	790	0.21	0.41	496	0.11	0.31	***
Provides clinical services	790	0.26	0.44	496	0.21	0.41	**

Table 7. Comparison of Resources Provided & Results of Interactions in Networks of Translational & Non-translational Researchers

Non-translational

	Researchers (self-identified)			Re (sel	ers fied)	Diff. of		
	n	Mean	SD	n	Mean	SD	Means	
RESOURCES PROVIDED BY COLLABORATO	DR							
Provided clinical expertise	780	0.30	0.46	496	0.24	0.43	**	
Provided data or other inputs	780	0.64	0.48	496	0.67	0.47		
Provided access to equipment	780	0.13	0.33	496	0.14	0.35		
Provided access to facilities	780	0.15	0.35	496	0.14	0.35		
Provided methodological/theoretical								
expertise	780	0.58	0.49	496	0.65	0.48	***	
Interpreted research for broader								
audiences	780	0.34	0.47	496	0.27	0.44	***	
Integrated diverse methods/approaches	780	0.27	0.45	496	0.23	0.42	*	
Helped obtain clinical/translational								
research support	759	0.31	0.46	488	0.11	0.32	***	
Introduced you to potential collaborators	759	0.31	0.46	488	0.24	0.42		
Reviewed your work prior to submission	759	0.24	0.43	488	0.20	0.40		
Helped you identify research								
dissemination pathways	780	0.21	0.40	496	0.12	0.32	***	
Helped you translate research for lay								
audience	780	0.15	0.36	496	0.07	0.26	***	
Invited you as a speaker	780	0.08	0.27	496	0.07	0.26		
RESULT OF INTERACTION								
Changed the data you use in your								
research	759	0.14	0.35	488	0.15	0.36		
Led to new clinical research activity	759	0.24	0.43	488	0.13	0.33	***	
Led to new types of interventions	759	0.15	0.36	488	0.11	0.32	*	
Changed the methods you use in your								
research	780	0.21	0.41	496	0.23	0.42		
Changed the substantive focus of your								
research	780	0.14	0.35	496	0.14	0.35		
Changed the way your communicate								
about your research	780	0.12	0.33	496	0.08	0.28	*	
Integrated concepts & ideas from								
different areas of expertise	750	2.79	1.04	465	2.65	1.09	**	
* <i>p</i> < .1; ** <i>p</i> < .05; *** <i>p</i> < .01.								

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The Center for Clinical and Translational Science at the University of Illinois at Chicago strives to advance and transform clinical and translational research through education, research support, and the facilitation of novel and collaborative approaches to clinical and translational research. We provide a recognizable geographic and intellectual single point of access for translational research at UIC and we bridge administrative boundaries that present barriers to optimal engagement of resources for cross collaboration and innovation. The overarching institutional and transformational goals of the CCTS are as follows: (1) Improve the research infrastructure at UIC to facilitate, develop, and enable clinical and translational research; (2) Provide models for moving research into the community, clinical practice, and health policy, and (3) Expand the pool of clinical and translational investigators at UIC.

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