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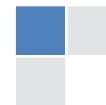
Washington University
Institute of **Clinical and**
Translational Sciences
Tracking & Evaluation Program

ICTS Research Collaboration: Executive Summary

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INTRODUCTION

In September 2007, Washington University (WU) was awarded a Clinical and Translational Science Award (CTSA) from the National Center for Research Resources. To ensure the intent of the CTSA, WU created the Institute of Clinical and Translational Sciences (ICTS). The overall goal of the ICTS is to serve as the intellectual and physical home for clinical and translational research, clinical research training, and career development to help overcome the traditional boundaries between disciplines, departments, institutions, and external partners.

The Tracking & Evaluation (T&E) Program was established to conduct the evaluation of the overall goals of the ICTS. The vision of the T&E Program is to utilize evidence-based and innovative evaluation methods to 1) inform ICTS strategic planning and program improvement activities, and 2) assess the impact of ICTS on clinical and translational science that results in clinical applications and meaningful community health outcomes.

Evaluation Approach

A major goal of the ICTS is to promote and facilitate collaborative research within the university, across institutions, and with regional and national partners. To chart the success of this collaboration goal we employ a simple scientific collaboration model (Figure 1) that views collaboration as occurring in three interconnected phases¹. These phases include:

1. Grant development and submission;
2. Active scientific collaboration; and
3. Scientific publication and dissemination.

Figure 1: Phases of Collaboration



Report Purpose

This report outlines key findings from the evaluation of collaborative research partnerships among ICTS members. To assess collaborative research, the T&E Program developed the ICTS Research Collaboration Survey. The survey was designed to collect the following information:

- Demographics;
- Collaborative research partnerships;
- General attitudes and satisfaction with collaborative research partnerships;
- Attitudes about transdisciplinary research; and
- Barriers encountered while conducting collaborative research.

The first administration of the ICTS Research Collaboration Survey occurred between March-April 2011 to all ICTS members (n=1041). Seventy one percent of members (n=737) responded to the survey. A full report including the results of this survey can be accessed at <http://icts.wustl.edu/about/2011CollabRpt.pdf>. The T&E Program

<http://icts.wustl.edu/about/2011CollabRpt.pdf>

will continue to administer this survey annually to better understand the collaborative research partnerships of ICTS members over the course of the ICTS initiative. Results will also be used to inform strategic planning to increase and enhance collaboration among ICTS members.

SUMMARY OF FINDINGS

Characteristics of Collaboration Network

There is a strong tendency for ICTS members to collaborate with other ICTS investigators.

| | | |
|---------------|--------------|----------------------|
| Total network | ICTS members | Avg. # collaborators |
| 2234 | 868 | 3.13 |

To determine collaboration networks among ICTS members, respondents were asked to identify their ten most important research collaborators during the last 12 months. These were not restricted to WU ICTS members or research. A total of 2,234 scientists were identified, 39% of whom (868) were ICTS members. Each scientist had an average of 3.13 collaborators. Though ICTS members report important collaborations with investigators from other universities and with local investigators who are not in the ICTS, there is a strong tendency toward research collaborations involving other ICTS investigators.

Interdisciplinary Collaboration

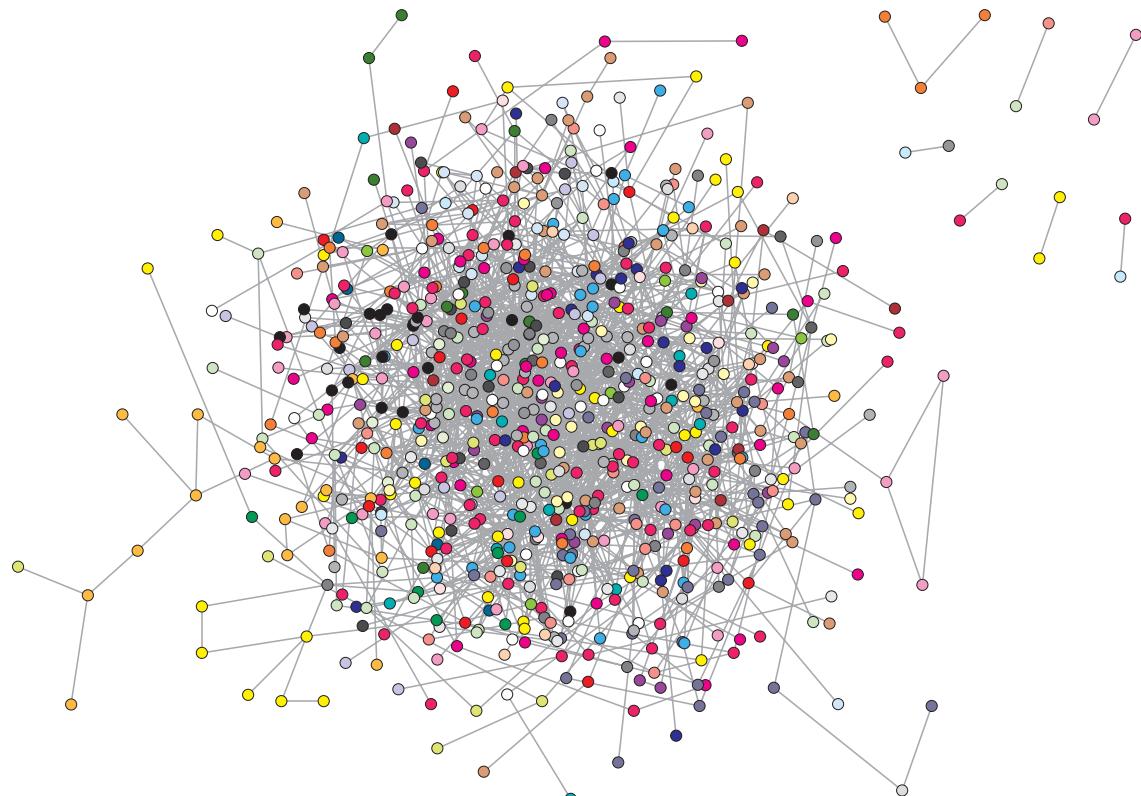
There is a fair amount of interdisciplinary collaboration among ICTS members.

Respondents' discipline was collected so inter- and intra-disciplinary collaboration could be assessed. Figure 2 shows the network of ICTS members only, removing the 70 respondents with no collaborators, color coded according to 37 disciplines. (Disciplines

| Interdisciplinary collaboration density | Intradisciplinary collaboration density | Ratio |
|---|---|---------------|
| .0035 | .0218 | = .162 |

were collapsed from National Institute of Health specialties.) The ratio of inter- to intra-disciplinary collaboration densities (% of possible collaborations that actually exist) was .162. This indicates that a fair amount of cross-discipline collaborations are occurring.

Figure 2: ICTS Interdisciplinary Collaboration Network



SUMMARY OF FINDINGS

Satisfaction with collaborative partnerships

ICTS members reported high satisfaction with collaborative experiences.

Eight items were used to assess satisfaction with collaborations. The mean scores for each item assessing satisfaction with collaboration were above 4 (out of 5), with overall opinions in the Good to Excellent range. A majority (64.5%) of respondents reported that the acceptance of new ideas among collaborators was excellent. Additionally, 65.8% felt that collaboration was excellent for capitalizing on the strengths of different researchers.

Impact of Collaboration

There was consensus that collaboration increases productivity and quality of work.

Table 1 outlines the six survey items used to assess the impact of collaboration. Respondents were asked to rate their views about their current research collaborations and to evaluate the overall quality of their research collaborations in terms of meeting productivity, product development, and overall productivity of collaboration. A large majority agreed or strongly agreed that collaboration has increased their productivity, as well as their quality of work.

Transdisciplinary Research

Benefits of transdisciplinary (TD) research outweigh the costs.

The survey included 15 items that assessed attitudes about transdisciplinary research and collaboration.² Eighty three percent of respondents strongly agreed that they value transdisciplinary collaboration. While they recognized that a collaborative research can take more time (55.3% somewhat or strongly agree), overall, they felt that the benefits of transdisciplinary research outweighed the costs (Figure 3).

Figure 3: TD research benefits outweigh costs

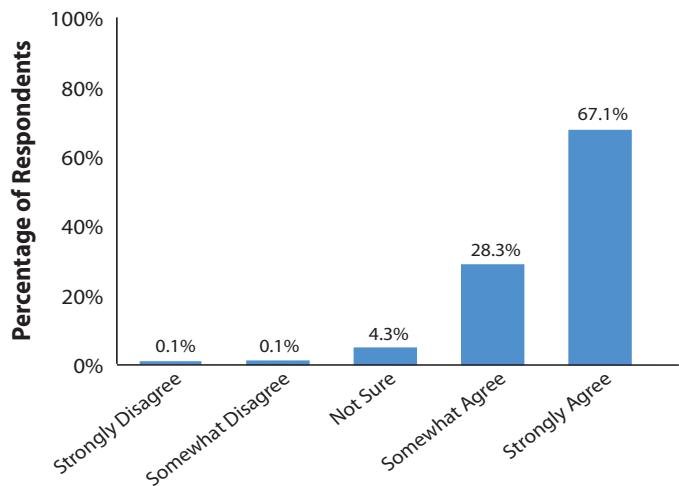


Table 1. Impact of Collaboration on Productivity and Quality of Work

| | Strongly Disagree (%) | Disagree (%) | Not Sure (%) | Agree (%) | Strongly Agree (%) |
|---|-----------------------|--------------|------------------|-----------|--------------------|
| 1. In general, collaboration has improved your research productivity. (n=711) | 1.3 | 0.3 | 2.7 | 17.4 | 78.3 |
| 2. In general, collaboration has improved the quality of your research. (n=712) | 1.3 | 0 | 1.5 | 14.2 | 83.0 |
| 3. Collaboration has posed a significant time burden in your research. (n=701) | 20.8 | 42.8 | 11.3 | 16.5 | 8.6 |
| | Inadequate (%) | Poor (%) | Satisfactory (%) | Good (%) | Excellent (%) |
| 4. Productivity of collaboration meetings (n=692) | 0 | 1.4 | 12.0 | 46.7 | 39.9 |
| 5. Productivity in developing new products (n=659) | 0 | 1.5 | 17.3 | 43.6 | 37.6 |
| 6. Overall productivity of collaboration (n=709) | 0 | 0.4 | 8.3 | 41.0 | 50.2 |

SUMMARY OF FINDINGS

Barriers to Collaboration

The main barriers to collaboration include time and funding.

The survey asked respondents what barriers they have encountered when trying to establish research collaborations with investigators from other departments, institutions, and organizations. Lack of time and lack of funding were the most frequently cited barriers (58.9% and 58.3%, respectively) (Figure 4).

Change in Collaboration as a result of ICTS

ICTS may have helped increase collaboration over the last three years.

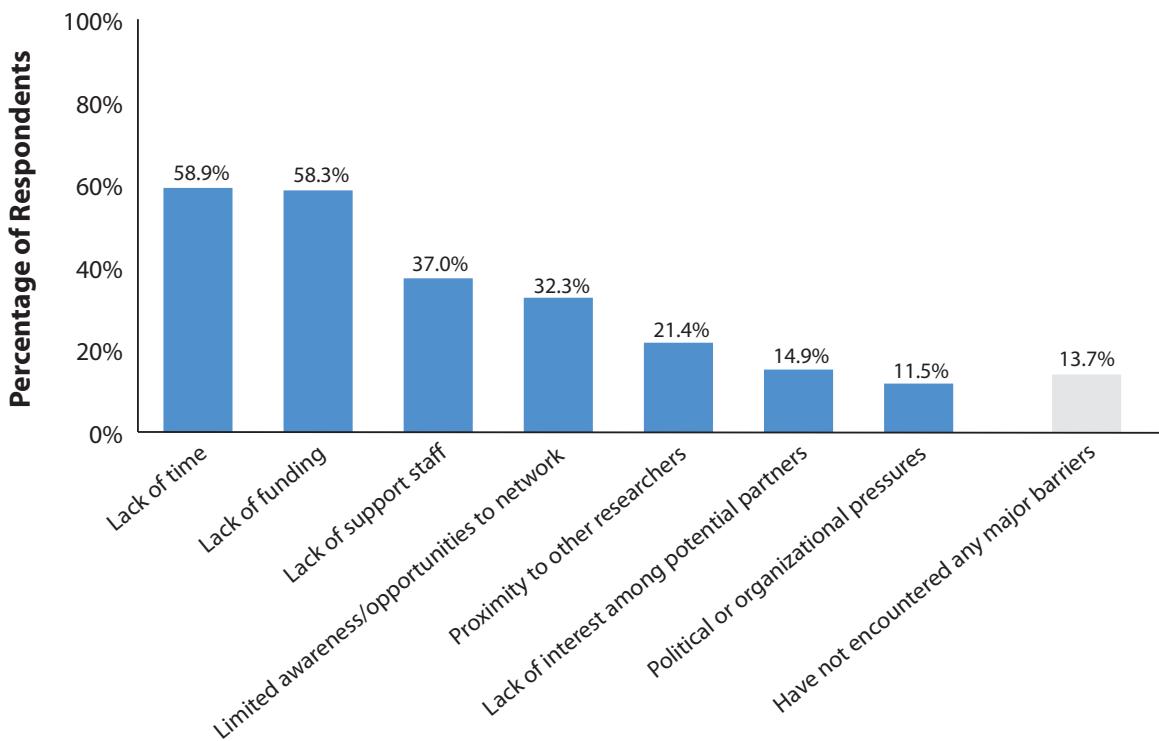
Although we do not have baseline data on collaborative research from the inception of our ICTS, we included four items on the survey asking respondents to evaluate how their collaborative efforts have changed over the past three years.

The survey responses indicate changes in collaboration, suggesting that ICTS may have helped bring about a cultural change. Compared to three years ago, a majority of respondents agreed that they are more aware of collaborative opportunities (86%), feel that it is easier to engage in collaborative activities (81%), and report that they are more engaged in research with collaborators from a discipline or areas of study that they would not have otherwise considered (80%). Additionally, 58% of respondents agreed that they are engaged in new types of collaborative partnerships that they would not have otherwise considered.

Impact of ICTS on Collaboration (2007-2010)



Figure 4: Main barriers to collaboration



CONCLUSIONS

Overall, the ICTS Research Collaboration survey provides valuable information about ICTS members' current research collaborations and their views regarding transdisciplinary research. Findings of particular interest include:

- ▶ ***There is high satisfaction with current collaborative experiences.***
- ▶ ***There is a strong tendency for ICTS members to collaborate with other ICTS investigators.***
- ▶ ***There is a considerable amount of interdisciplinary collaboration among ICTS members.***
- ▶ ***Collaboration has improved both research productivity and quality of work.***
- ▶ ***Transdisciplinary collaboration is strongly valued and the benefits of transdisciplinary research outweigh the costs.***
- ▶ ***Lack of time and lack of funding are barriers to establishing research collaborations with investigators from other departments, institutions, and organizations.***
- ▶ ***ICTS may have played a role in increasing collaboration over the past 3 years.***

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