

CTSAs as Catalysts of Translation: the Public Image

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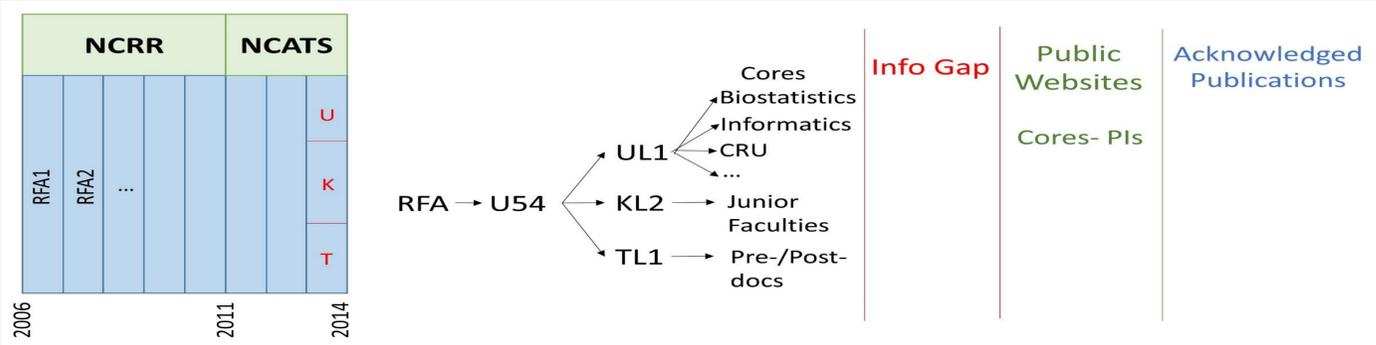
Abstract

In the era of data abundance, we learn to assess the public image of complex NIH programs. The Clinical and Translational Science Award (CTSA) program is the largest program at NIH. The CTSA program was designed to “provide integrated intellectual and physical resources for the conduct of original clinical and translational science,” and individual CTSA sites were intended to serve as “catalysts and test beds for policies and practices that can benefit clinical and translational research organizations throughout the country.”

This project focuses on visualizing the catalytic role of the CTSA program via analysis of data from publications, CTSA websites, social media and the NIH RePORTER. We study various dimensions of the program that include research topics, resources and collaborations among CTSAs, other stakeholders and funding agencies.

Disclaimer: All results are preliminary and presented for the purposes of discussion and gathering user feedback. No part of this presentation can be referred or cited publicly.

Information Gap Between Internal NIH and Public Data



How to identify collaborations & research topics supported by the CTSA program ?

Data

Data Sources & Associations



Identifying CTSA Awards

Identify 12 past CTSA RFAs (RFA-RM-06-002, RFA-RM-07-002, RFA-RM-07-006, RFA-RM-07-007, RFA-RM-08-002, RFA-RM-09-004, RFA-RM-09-019, RFA-RM-10-001, RFA-RM-10-020, RFA-RR-10-007, RFA-RR-11-004, RFA-TR-12-006)

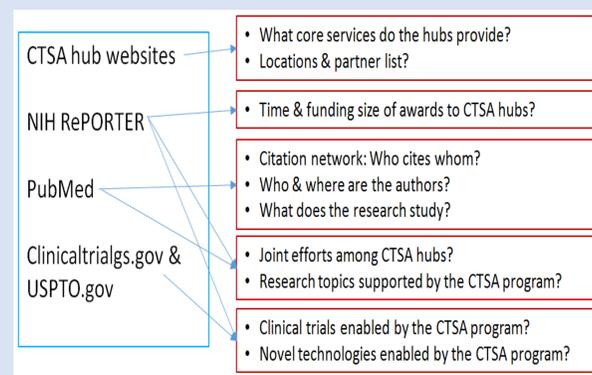
Search awards using RFA on RePorter: 2700 awards

Main awards (ignoring application type): 383

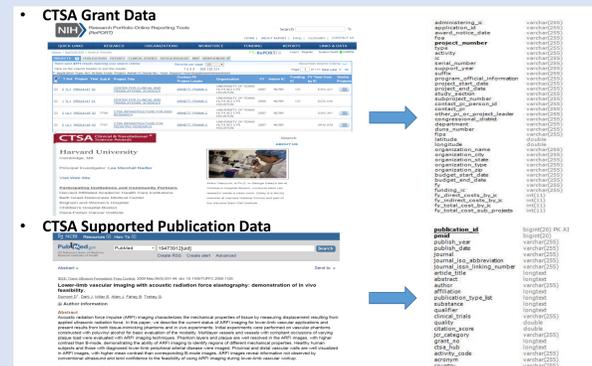
Distinct CTSA hubs: 62

Activity Code	Category	Title	Number of Grants
KL2	Research Career Programs	Mentored Career Development Award	136
TL1	Training Programs	Linked Training Award	105
U54	Cooperative Agreements	Specialized Center—Cooperative Agreements	6
UL1	Cooperative Agreements	Linked Specialized Center Cooperative Agreement	136

Data Sources & Questions to be Answered

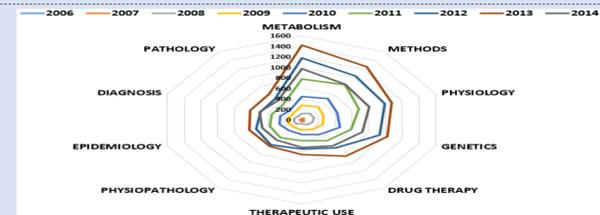


Data Extraction, Transformation & Load



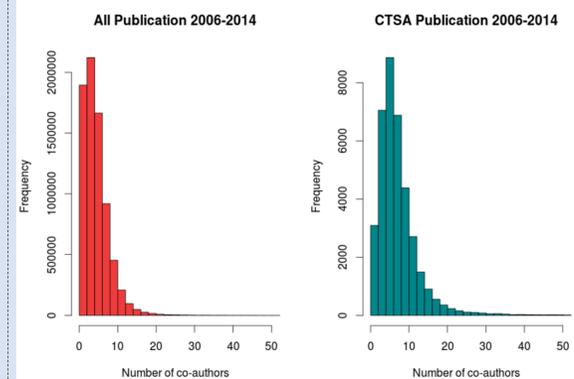
Research Topics as Mesh Terms

Mesh terms (qualifier) are used as general topics from CTSA supported publications. The figure shows the trend of topic (top 10) change over year.

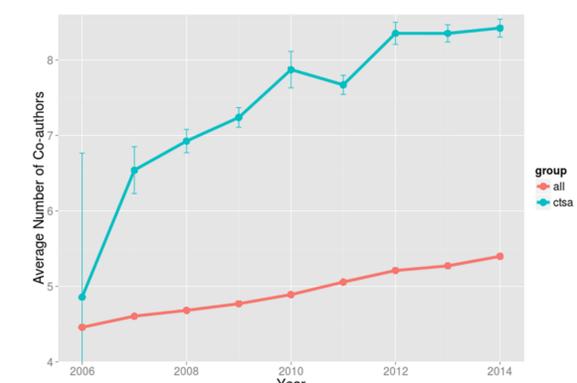


Co-Authorship on CTSA Publications

Histograms of number of co-authors for all publications and CTSA supported publications during 2006-2014



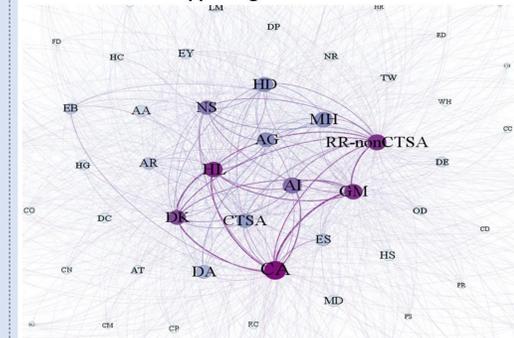
Average Number of Co-Authors for All PubMed Publications and CTSA Supported Publications Over Year



CTSA supported publications have in average more co-authors than all PubMed publications.

CTSA Collaborations

Co-Funding Network between Funding Agencies in Supporting Publications



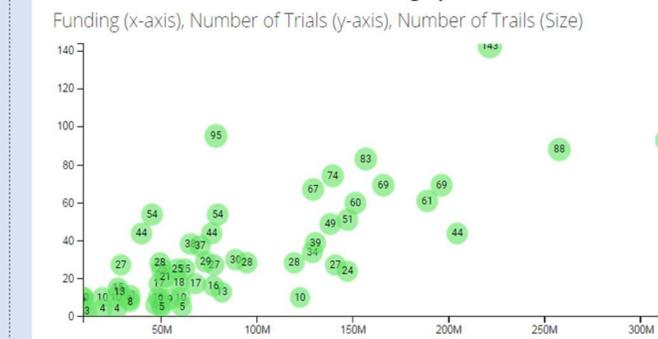
Top 12 Funding Agencies Collaborating with Others

Ranking	Top 12 Funding Agencies Collaborating with Others	Number of Collaborations in Publications (2006 - 2014)
1	CA (NIH National Cancer Institute)	97,744
2	HL (NIH National Heart, Lung and Blood Institute)	87,990
3	GM (NIH National Institute of General Medical Sciences)	85,350
4	RR-non CTSA (National Center for Research Resources, excluding CTSA funding)	85,020
5	DK (NIH National Institute of Diabetes and Digestive and Kidney Diseases)	75,788
6	AI (NIH National Institute of Allergy and Infectious Diseases)	63,648
7	NS (NIH National Institute of Neurological Disorders and Stroke)	60,207
8	AG (NIH National Institute on Aging)	51,262
9	HD (NIH National Institute of Child Health and Human Development)	50,486
10	MH (NIH National Institute of Mental Health)	50,228
11	CTSA	45,247
12	DA (NIH National Institute on Drug Abuse)	34,332

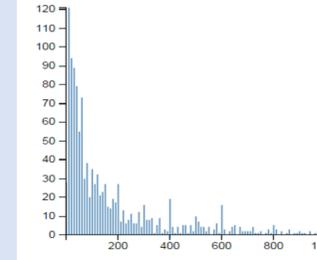
Co-funding network between funding agencies in supporting publications. CTSA program ranks 11st among 137 funding agencies. Notes: a proper comparison would be among programs. CTSA programs has changed home IC.

Clinical Trials

Number of clinical trials supported by CTSA Hubs versus their total funding up to 2014



ClinicalTrial by Enrollment (bar)



Distributions of number of enrollment (long tail beyond 1000 is cut off for better visualization).

Top 10 studied conditions in CTSA supported clinical trials

Ranking	Condition	Number of Clinical Trials	Ranking	Condition	Number of Clinical Trials
1	HIV Infections	82	6	Cystic Fibrosis	27
2	Obesity	77	7	Asthma	25
3	Depression	39	8	Healthy	24
4	Hypertension	34	9	Diabetes	23
5	Cardiovascular Diseases	32	10	Heart Diseases	23

Conclusion

- The use of publicly available data requires the knowledge of internal business processes
- Linking diverse data source can be done with understanding of their detailed relationships
- Please share with us your experience!**