

The mosaic of translation: an analysis of translational medicine publications

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Topical Analysis

PubMed

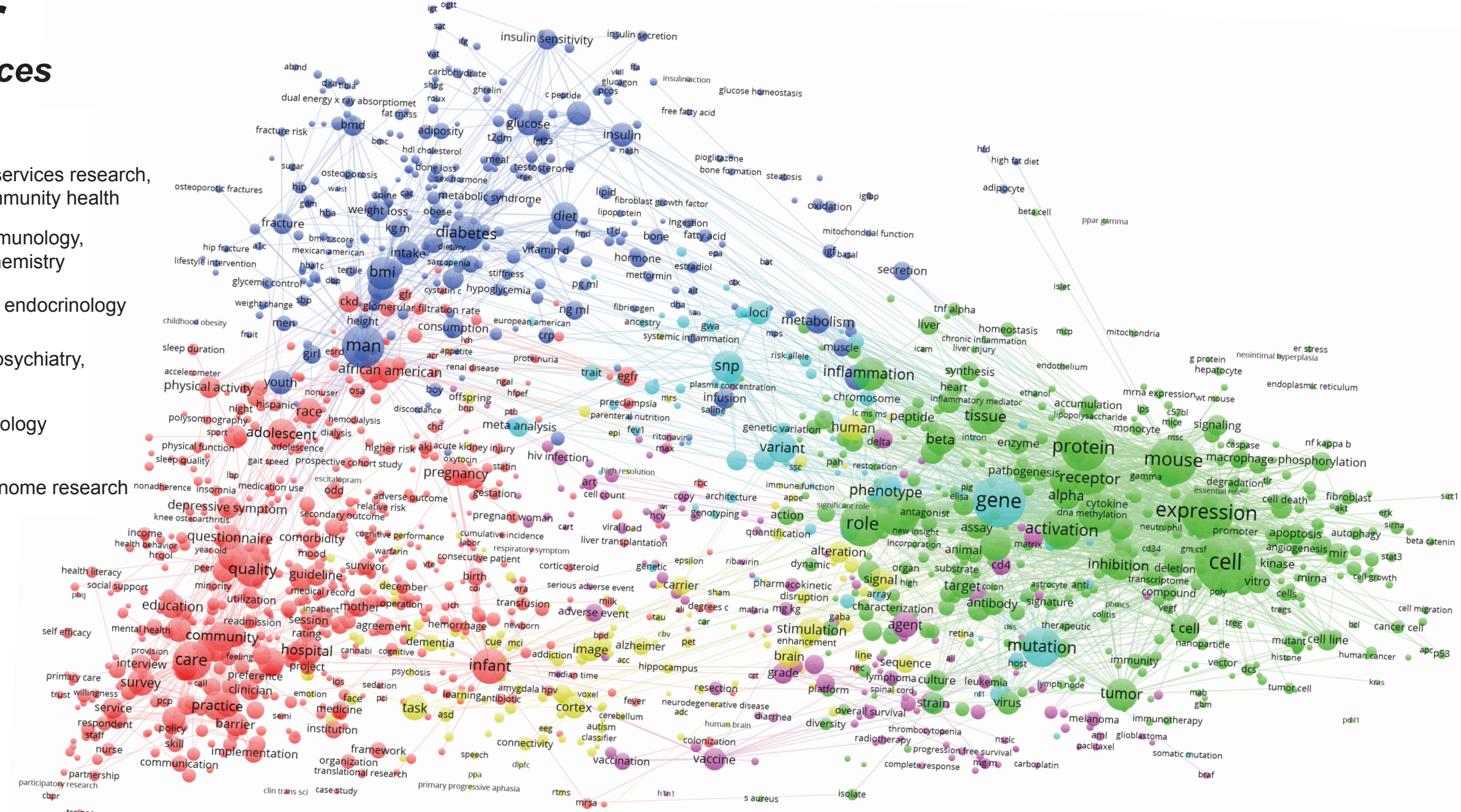
Using PubMed, we found 43,086 publications connected to CTSA grants from 2008-2015. The titles and abstracts were exported to a CSV file for analysis. Search Strategy: (((UL1 TR*[Grant Number]) OR UL1TR*[Grant Number]) OR UL1 RR*[Grant Number]) OR UL1RR*[Grant Number]. Grant numbers were identified using NIH RePORTER.

VOSviewer

Term Co-occurrences

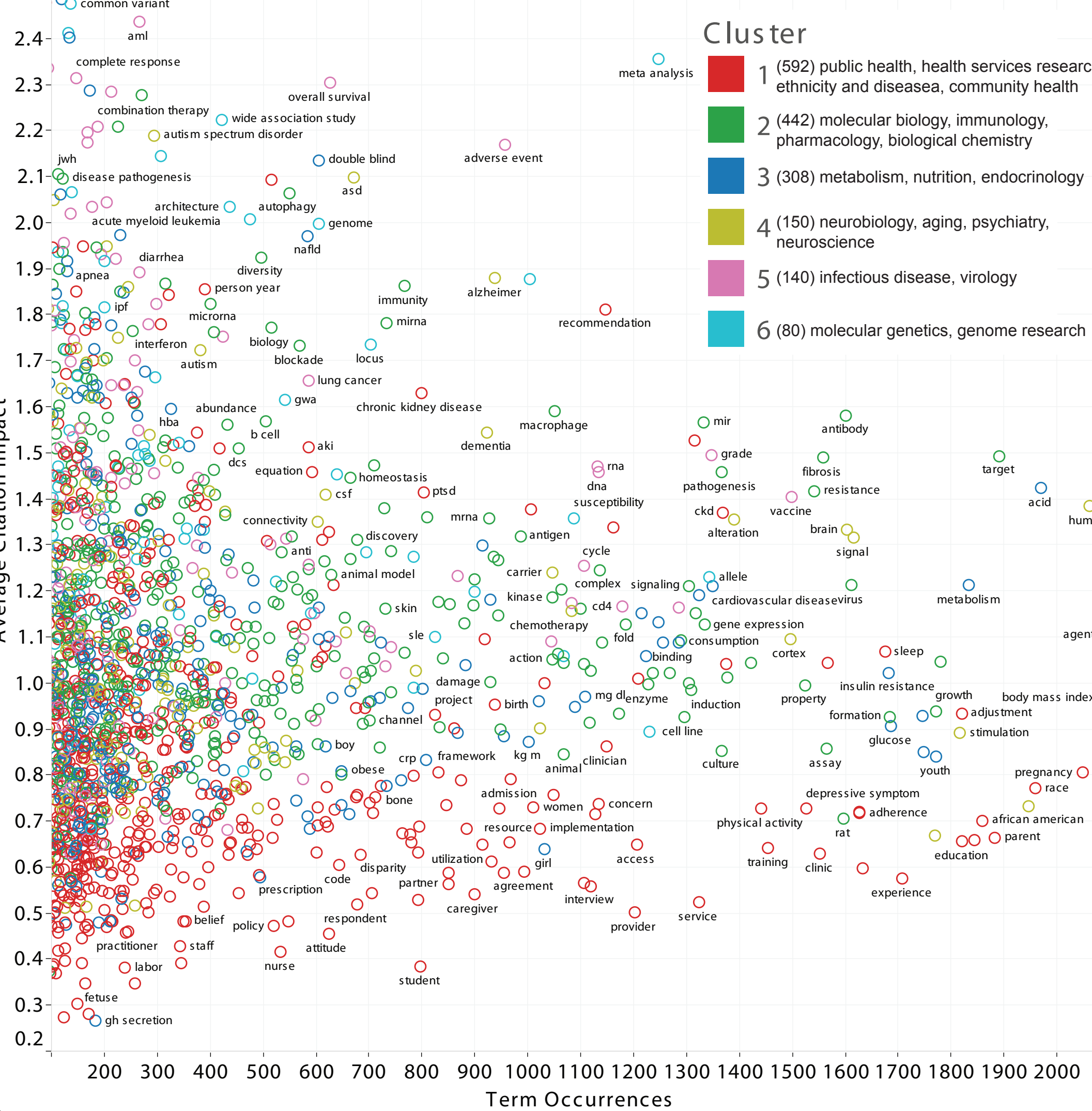
Cluster

- 1 (592) public health, health services research, ethnicity and disease, community health
- 2 (442) molecular biology, immunology, pharmacology, biological chemistry
- 3 (308) metabolism, nutrition, endocrinology
- 4 (150) neurobiology, aging, psychiatry, neuroscience
- 5 (140) infectious disease, virology
- 6 (80) molecular genetics, genome research



Using VOSviewer software, titles and abstracts of the 43,086 PubMed records were parsed to produce a list of noun phrases and their frequencies in the publications. VOSviewer uses an algorithm to discover relevant terms and remove non-meaningful terms. We excluded terms that occurred less than 87 times and we merged some terms for a more accurate map. This process yielded 1,712 terms to be included in the visualization. The term co-occurrence map is laid out in clusters. A cluster is a set of closely related terms, with each term assigned to exactly one cluster. The number of clusters is determined by VOSviewer using a resolution parameter. The size of each term circle indicates the number of times the term was used in the title or abstract of publications within the dataset. Cluster themes were identified algorithmically through text analysis and matching.

Tableau



Term Occurrences and Citation Impact

Using Tableau software, the data file from VOSviewer was visualized to show the average citation impact and the number of occurrences of the terms. Each term was assigned a citation impact score.

This score is calculated based on the number of citations received by the publication divided by the average number of citations of all publications that were published in the same year. Because terms can be used in a large number of publications, each term's citation impact is calculated as an average from each publication in which the term is found.

A citation impact score of 1.0 means the term is used in publications that are cited exactly as would be expected based on the global average for similar publications. A citation impact score of 1.5 means the term is used in publications that are cited 50% more than would be expected. A citation impact score of 0.5 means the term is used in publications that are cited 50% less than would be expected.

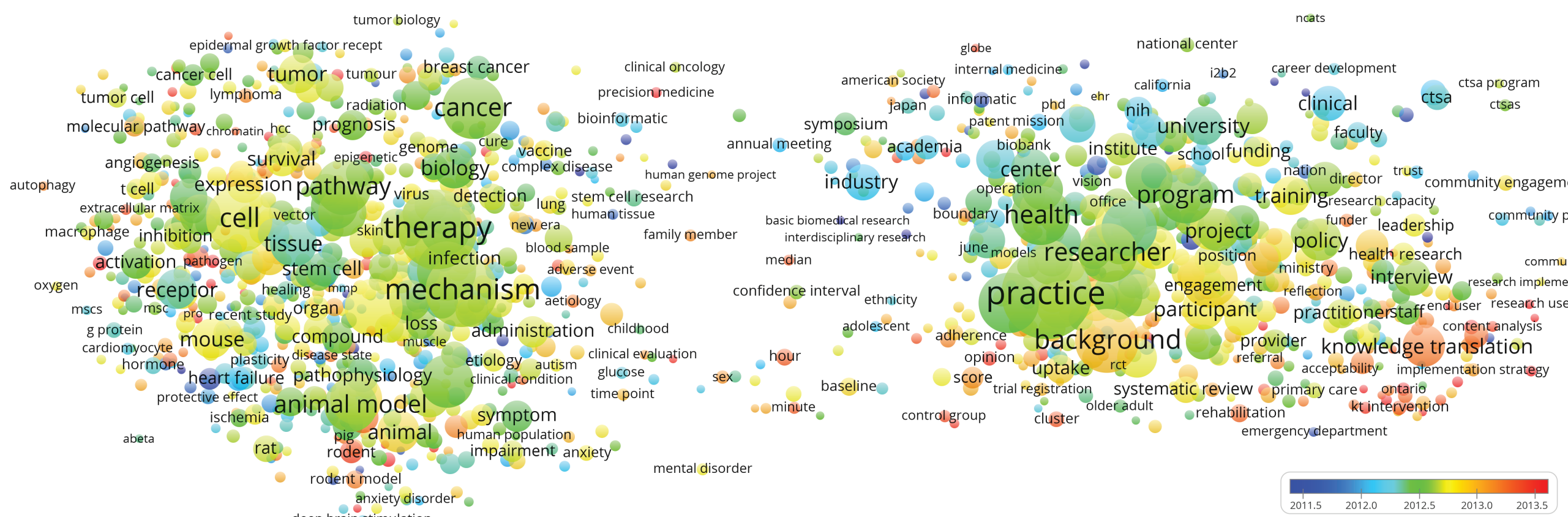
As with the visualization above, each term has been assigned to one of six clusters. Cluster themes were identified algorithmically through text analysis and matching.

Analysis of Indexing

Medical Subject Headings (MeSH)

The term "Translational Medical Research"[Mesh] was introduced in 2012 (2010) and refers to the application of discoveries generated by laboratory research and preclinical studies to the development of clinical trials and studies in humans. A second area of translational research concerns enhancing the adoption of best practices. As of 03/31/2016 there are 6,041 PubMed records indexed with the "Translational Medical Research" MeSH term.

VOSviewer



This map shows terms extracted from the titles and abstracts of 6,041 PubMed records indexed with the "Translational Medical Research" MeSH term. Coloring is based on term scores which were calculated based on the average date of publication for the term. For each of the 2,158 terms identified, a relevance score was calculated. Based on this score, the top 60% (approximately 1,295 terms) most relevant terms were selected for the visualization. The term circles are sized by the number of times the term was used in the title or abstract of the publications within the dataset. The visualization was created in VOSviewer on 3/31/2016.

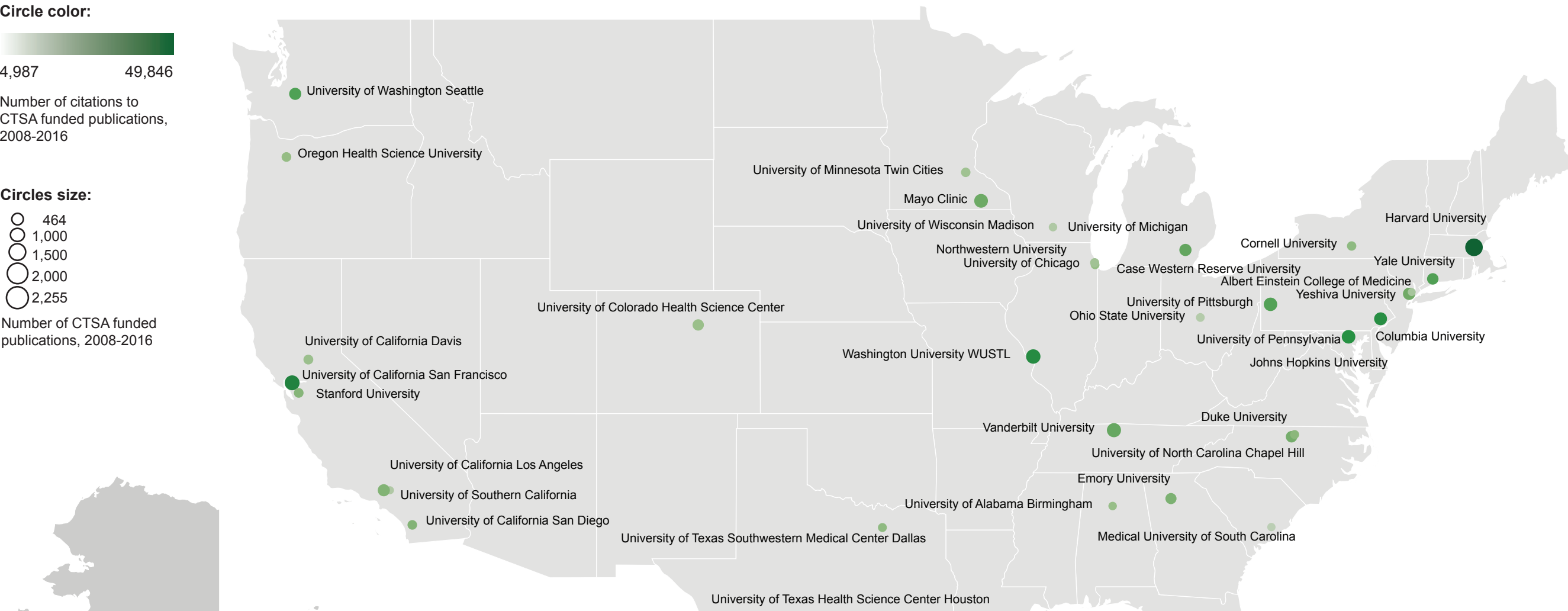
Analysis of Institutions

Web of Science

Using Web of Science, we found 22,771 publications connected to CTSA grants from 2008-2016. The results were exported to a CSV file for analysis. Search strategy: FG=(UL1TR*) OR FG=(UL1 TR*) OR FG=(UL1 RR*) OR FG=(UL1RR*) OR FG=(TL1TR*) OR FG=(TL1 TR*).

Note: the KL2 award was not included

Tableau



Using Tableau software, we mapped the top 35 institutions when ranked by number of publications. The circles are sized by number of publications and colored by number of citations. This map was created on 4/27/2016.

Analysis of journal coverage

This chart identifies the coverage in literature databases of serials that use "translation" in their title.

Serial Title with "Translation"	JIF	NLM Catalog	UlrichsWeb	Indexed in MEDLINE	Scopus	Web of Science
Alzheimer's & Dementia: Translational Research & Clinical Interventions						
American Journal of Translational Research	3.40					
AMIA Joint Summits on Translational Science proceedings AMIA Summit on Translational Science						
Annals of Clinical and Translational Neurology						
Annals of Translational Medicine						
Annals of Translational Medicine & Epidemiology						
Applied and Translational Genomics						
Cancer Translational Medicine						
Chronic Diseases and Translational Medicine						
Clinical and Translational Allergy						
Clinical and Translational Gastroenterology						
Clinical and Translational Imaging						
Clinical and Translational Immunology						
Clinical and Translational Medicine						
Clinical and Translational Oncology						
Clinical and Translational Science						
Current Chemical Genomics and Translational Medicine						
Current Research in Translational Medicine						
Current Translational Geriatrics and Experimental Gerontology Reports						
Drug Delivery and Translational Research						
European Journal of Translational Myology						
Experimental & Translational Stroke Medicine						
IEEE Journal of Translational Engineering in Health and Medicine						
International Archives of Translational Medicine						
International Journal of Translation and Community Medicine						
JACC: Basic to Translational Science						
Journal of Cardiovascular Translational Research	3.02					
Journal of Clinical and Translational Endocrinology						
Journal of Clinical and Translational Endocrinology Case Reports						
Journal of Clinical and Translational Hepatology						
Journal of Clinical and Translational Research						
Journal of Collaborative Healthcare and Translational Medicine						
Journal of Experimental Stroke and Translational Medicine						
Journal of International Translational Medicine						
Journal of Neurology and Translational Neuroscience						
Journal of Orthopaedic Translation						
Journal of Pathology and Translational Medicine						
Journal of Translational Internal Medicine						
Journal of Translational Medicine	3.93					
Journal of Translational Medicine & Epidemiology						
Journal of Translational Medicine and Research						
Journal of Translational Science						
Multiple Sclerosis Journal - experimental, translational and clinical						
New Horizons in Translational Medicine						
Oncology and Translational Medicine						
Open Translational Medicine Journal						
Progress in Molecular Biology and Translational Science	3.49					
Regenerative Engineering and Translational Medicine						
Revista de Investigacion Clinica Clinical and Translational Investigation Science Translational Medicine	15.84					
Stem Cell and Translational Investigation	5.71					
Stem Cells Translational Medicine						
Summit on Translational Bioinformatics						
Translational and Clinical Pharmacology						
Translational Andrology and Urology						
Translational Behavioral Medicine						
Translational Bioinformatics						
Translational Biomedicine						
Translational Cancer Research						
Translational Developmental Psychiatry						
Translational Endocrinology & Metabolism						
Translational Epigenomics						
Translational Gastrointestinal Cancer						
Translational Issues in Psychological Science						
Translational Journal of the American College of Sports Medicine						
Translational Lung Cancer Research						
Translational Medicine						
Translational Medicine at UNISA						
Translational Medicine Research						
Translational Neurodegeneration						
Translational Neuroscience	1.32					
Translational Oncogenomics	2.88					
Translational Oncology						
Translational Pediatrics						
Translational Perioperative and Pain Medicine						
Translational Proteomics						
Translational Psychiatry	5.62					
Translational Research (formerly Journal of Laboratory and Clinical Medicine)	5.03					
Translational Research in Anatomy						
Translational Research in Biomedicine						
Translational Research in Endocrinology & Metabolism						
Translational Research in Oral Oncology						
Translational Respiratory Medicine						
Translational Science for Rare Diseases						
Translational Stroke Research	2.44					
Translational Vision Science & Technology						
Translatsionnaya Meditsina						
World Journal of Translational Medicine						
TOTAL (88):		75	69	12	34	25