

External expert identification and mapping through author publication altmetrics and network analysis

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About this work

Challenge

We sought to identify influential external experts through an analysis of publications activity.

Our approach

We investigated combining multiple article-level metrics (i.e. 'altmetrics') with an author network analysis to identify experts who contributed to highly impactful research and were well connected with other experts in their field.

What we did

We analysed a sample of publications on a selected topic that had high altmetrics impact to investigate the utility of this approach.

Publication sample

Dimensions search on 16 July 2019
Search criteria: 'avelumab' in title or abstract

Selected those with highest Altmetric Attention Score in 2019
500 publications

Excluded corrupted entries or missing PlumX data
477 publications

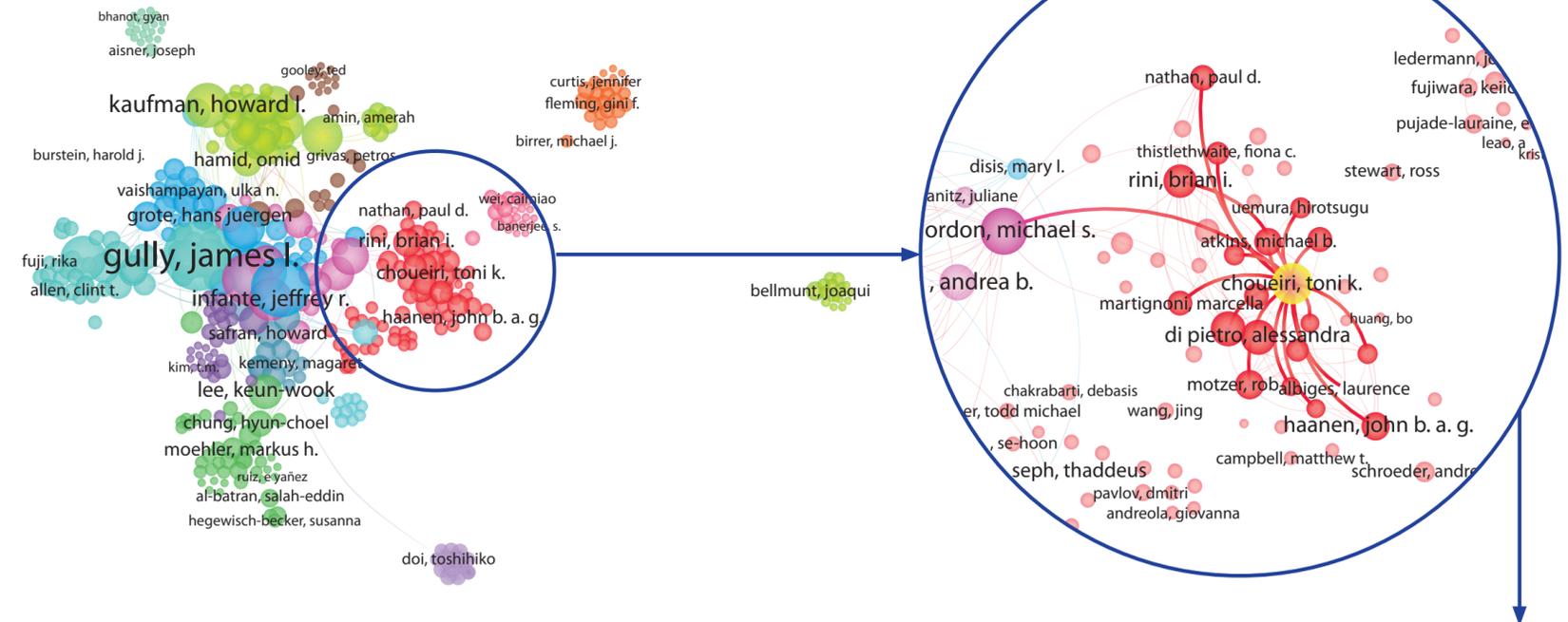
Split into authors and disambiguated
2000 authors

Selected top 500 authors by network connections and eliminated those not connected to the wider network
429 authors

Publication analysis

Network	Influence Range Closeness Centrality (IRCC) Betweenness Prestige Cluster
Publication metrics	Social media (Facebook, Twitter) Scholarly (abstract views, Mendeley saves) News (blog posts, news articles) Citations (publications, Wikipedia, guidelines, DynaMed)

Publications network



Author analytics

Network



	Cluster	IRCC	Betweenness	Prestige
Percentile	–	76%	0%	36%
Rank	1	70	35	27

Publication metrics

	Social	Scholarly	News	Citations	Total
Score	116	34	119	34	116
Rank	6	48	1	52	13

Implications

This approach provides several useful metrics for external expert identification, including:

- clusters of experts with the highest publication impact, whether in social media, news, scholarly mentions or citations
- individual experts from different clusters who have the highest publication impact
- individual experts who are most central to the network
- individual experts who are most highly connected or provide bridges connecting different clusters.