Science Surveyor
Citation Network Analysis

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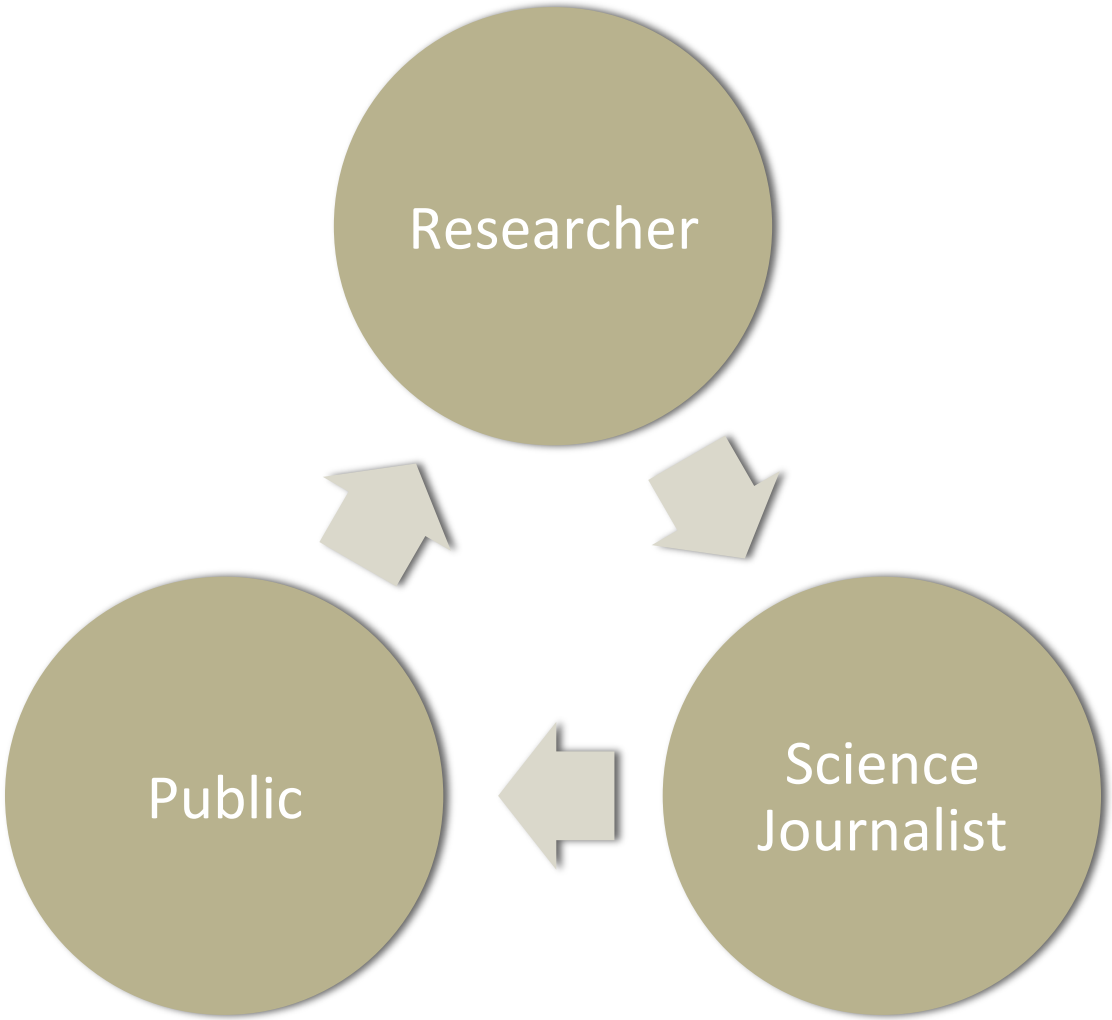
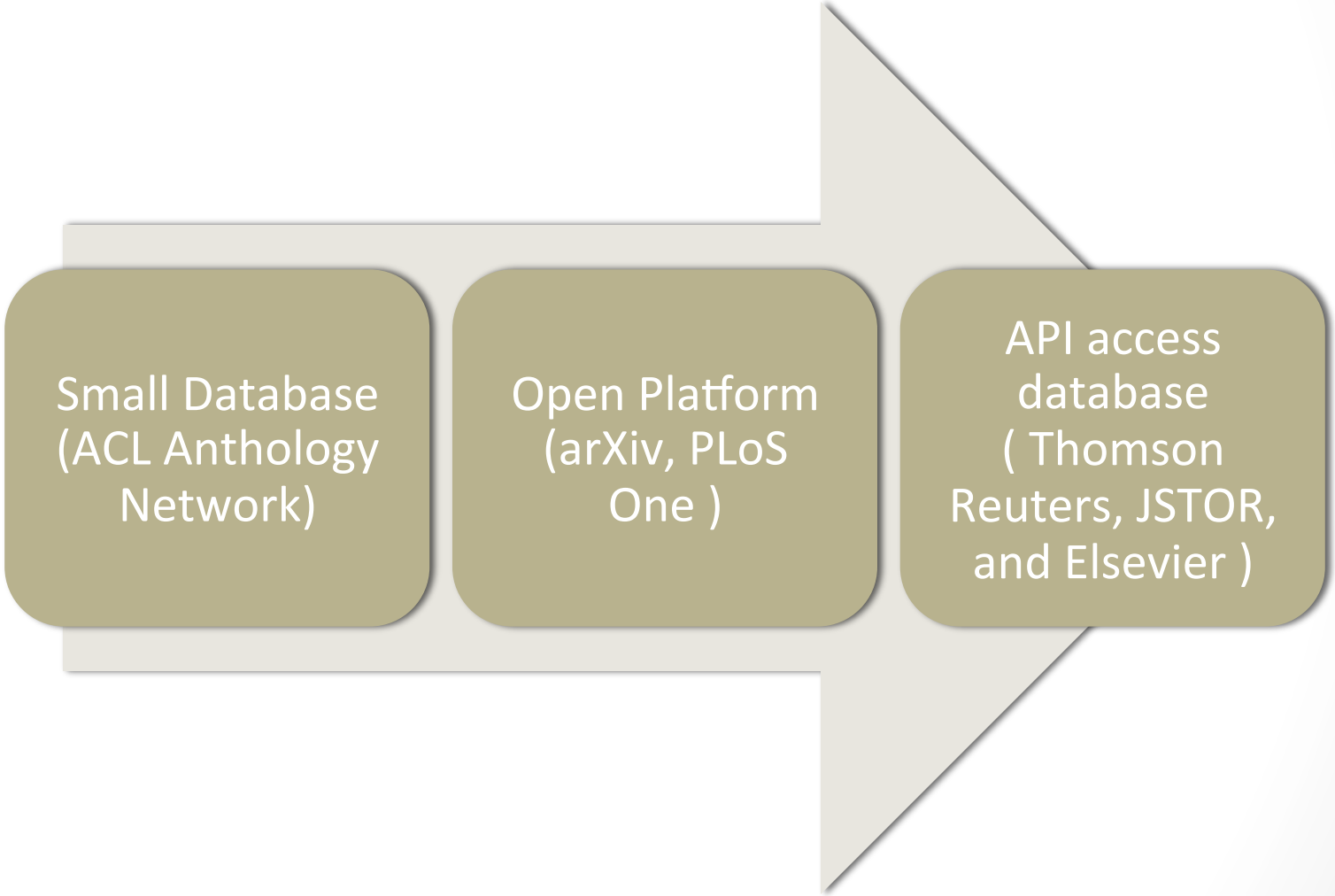
EECS E6898 Project Presentation

Problem



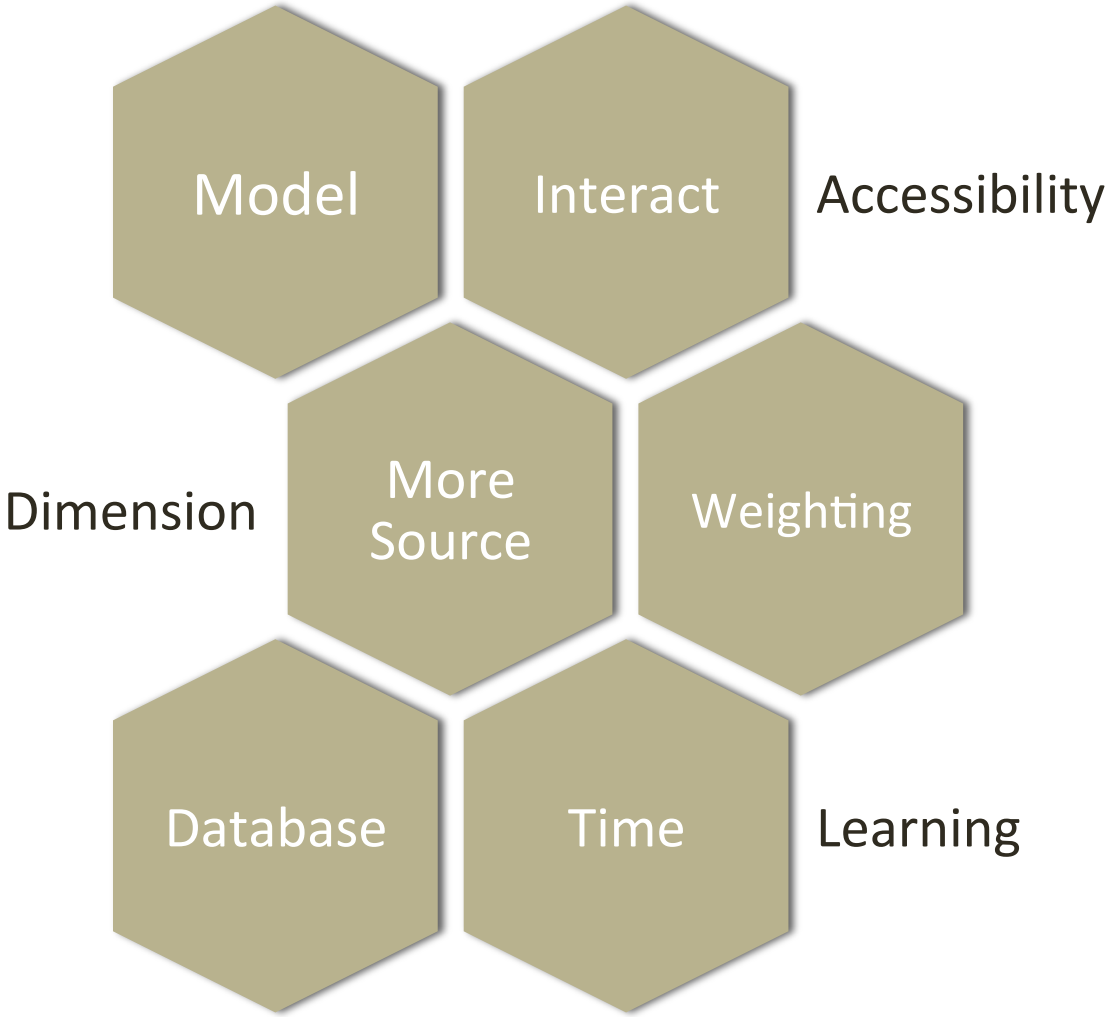
Science Surveyor Road Map



Four Dimension Evaluation

Consensus Layer	• Citation Network • Relation with consensus
Funding Layer	• Biased Result, similar network • Popularity Indicator
Idea Layer	• NLP Based • Content Similarity
Temporal Layer	• Pattern Across Time

Compare to Previous Project



Evaluation Methods

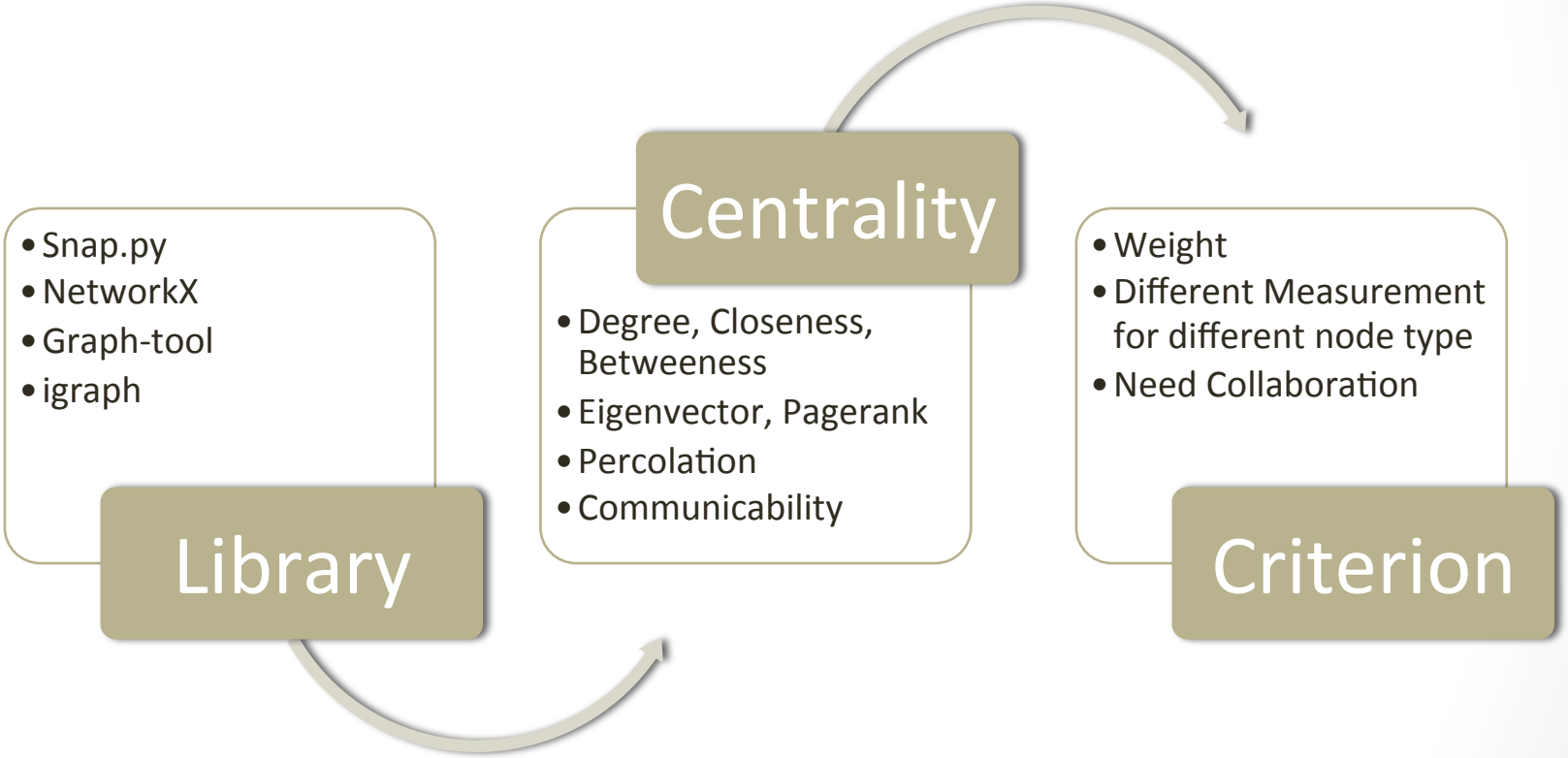
Human Test

- Compare cluster view and time zone view with existing citation system
- Evaluate Accessibility and Result Quatliy by Science Jourlist

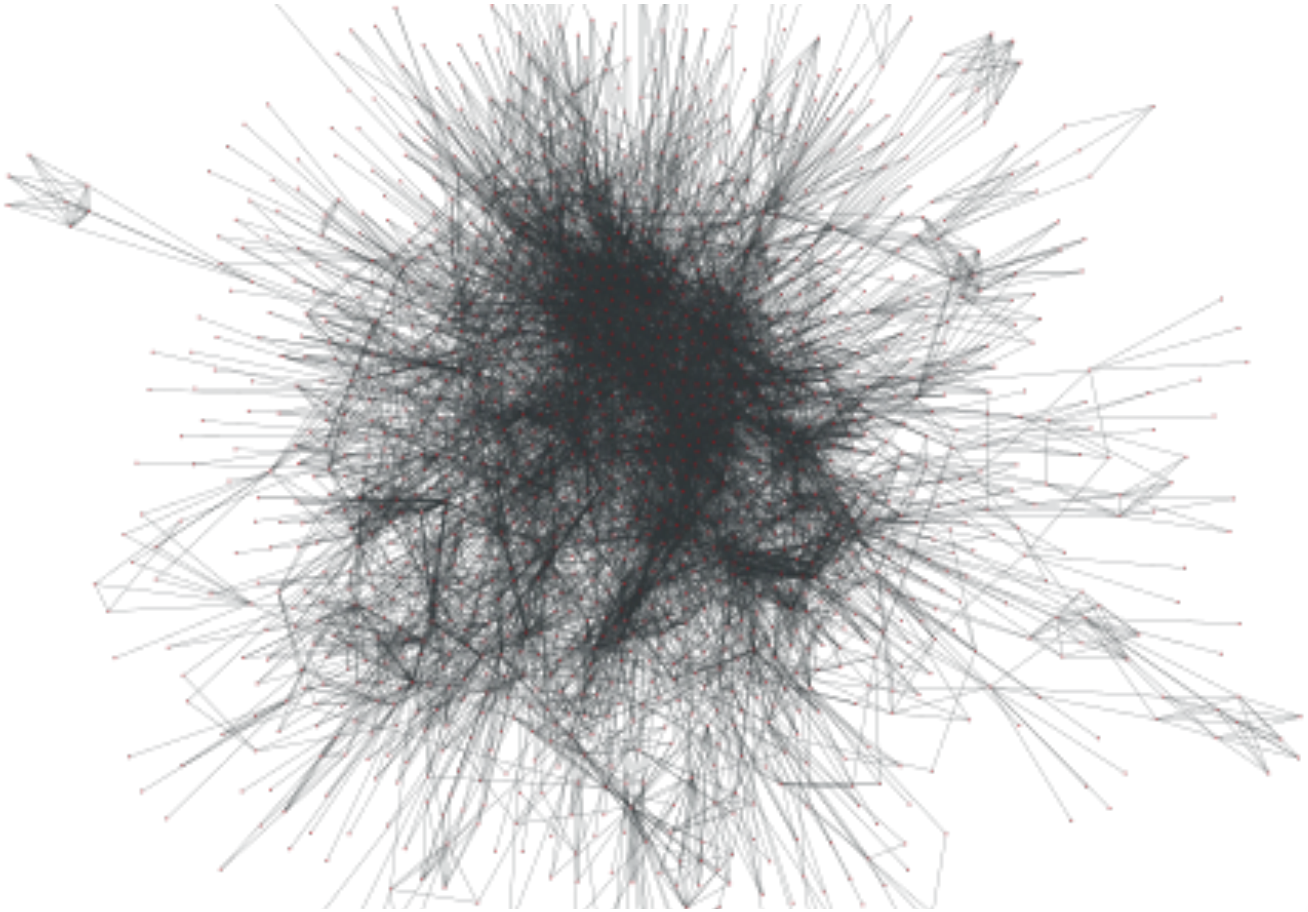
Computer Test

- Validation in research front classification with labeled finding/ region test set
- Cross Validation when building trends prediction model

Preliminary Experiments



Visualize the Network



Result Comparison

Table.1 Centrality of Michael John Collins

Centrality	2008	2009	2010
Betweenness	0.020279099	0.020908112	0.016284481
PageRank	0.003676429	0.003630617	0.003218470

Table.2 Centrality of Susan E. Brennan

Centrality	2008	2009	2010
Betweenness	0.000755152	0.000655850	0.000232821
PageRank	0.000335703	0.000292816	0.000209016

Facility/Collaboration Needed

- Graphic Design (Web UI/UX)
- NLP (Extract Idea Network)
- Experts in the specific region (decide the criterion of scoring and centrality evaluation)
- Science journalist (Find what they want)
- Scholarly publisher (Access to the publication database)
- Press (Make it known to journalists and the public)

Thank you !