

Background

Assessment of Collection

- Usage statistics (SUSHI)
- Cost-per-use (CPU)

Examining Reference Lists

- Interpreting existing data
- Better understanding of research of the Biological and Environmental Science and Engineering (BESE) academic division

Significance

- Assess collection value
- Build a workflow for automation

Primary Objective

How and what are students in the BESE division citing in their doctoral dissertations?

Secondary Objectives

- Similarities/Differences of citation patterns
- Are cited resources in the library collection?

Methodology

Sample

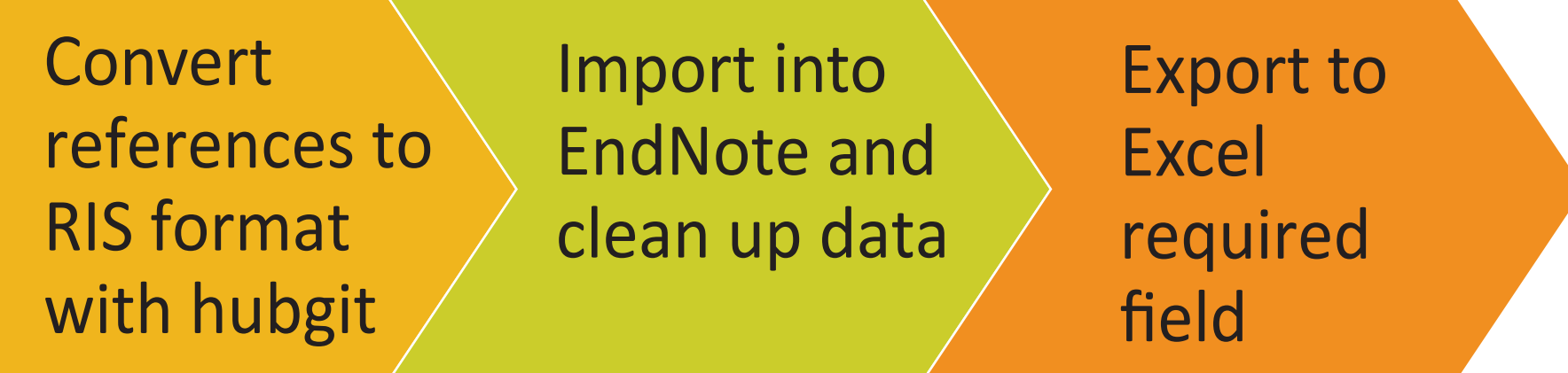
Total PhD dissertations in IR = 447 (2012-2018)

BESE dissertations completed 2016 - 2018

	Total #dissertations	# Dissertations (2016-2018)	Embargo	Sample
Bio	33	21	7	14
EnSE	35	19	3	16
MarSE	26	10	5	5
Total	94	50	15	35

Workflow Process

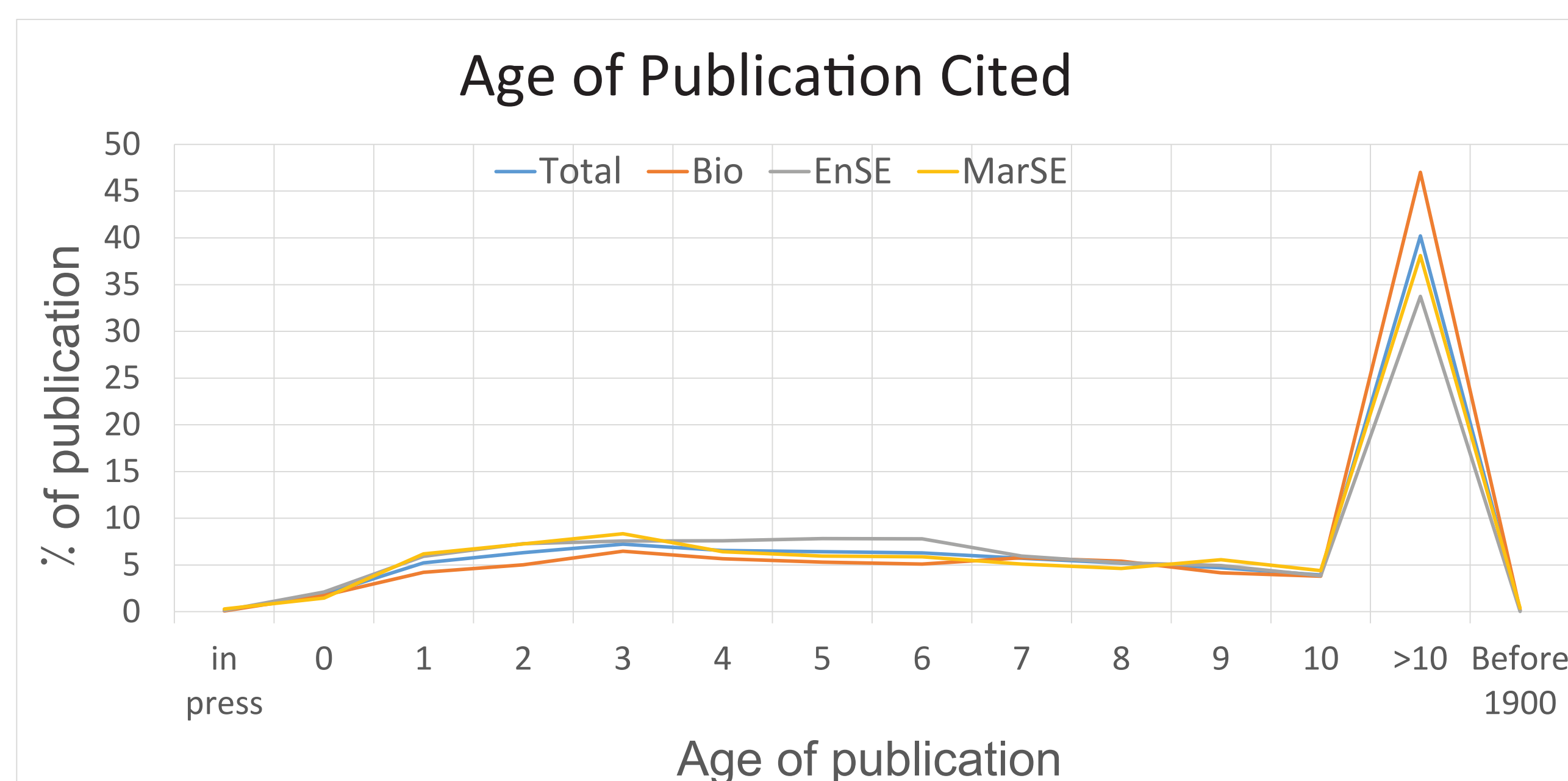
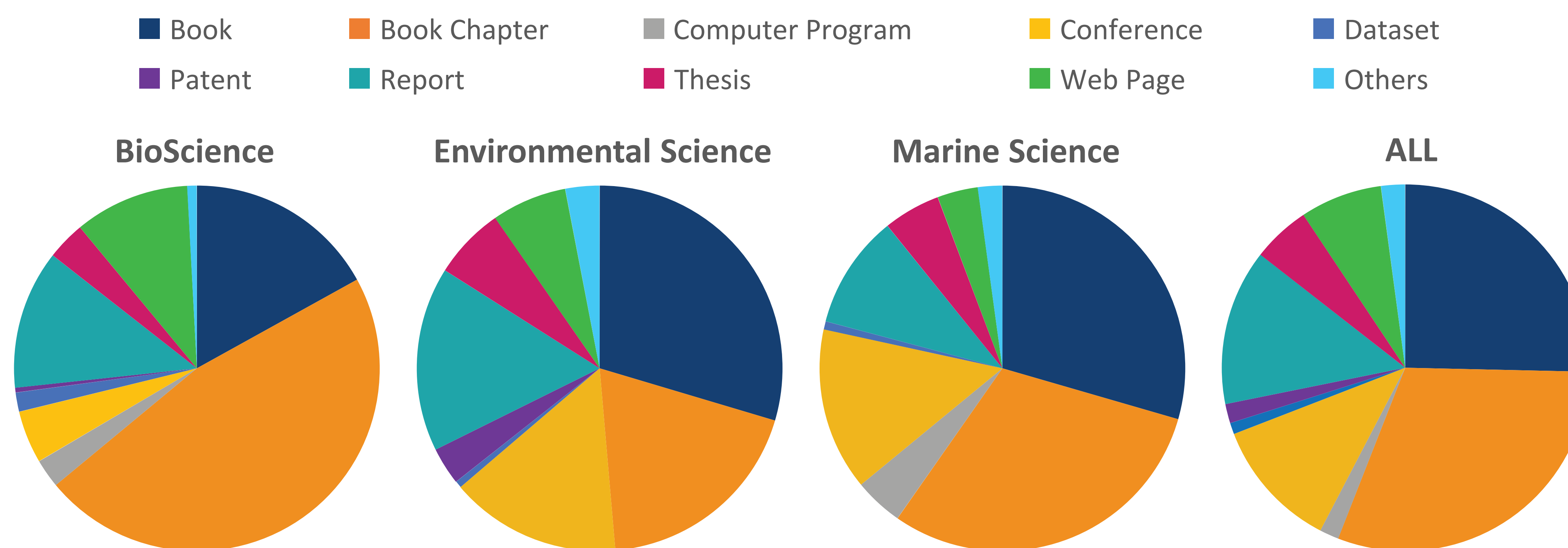
- Converting reference lists to structured data



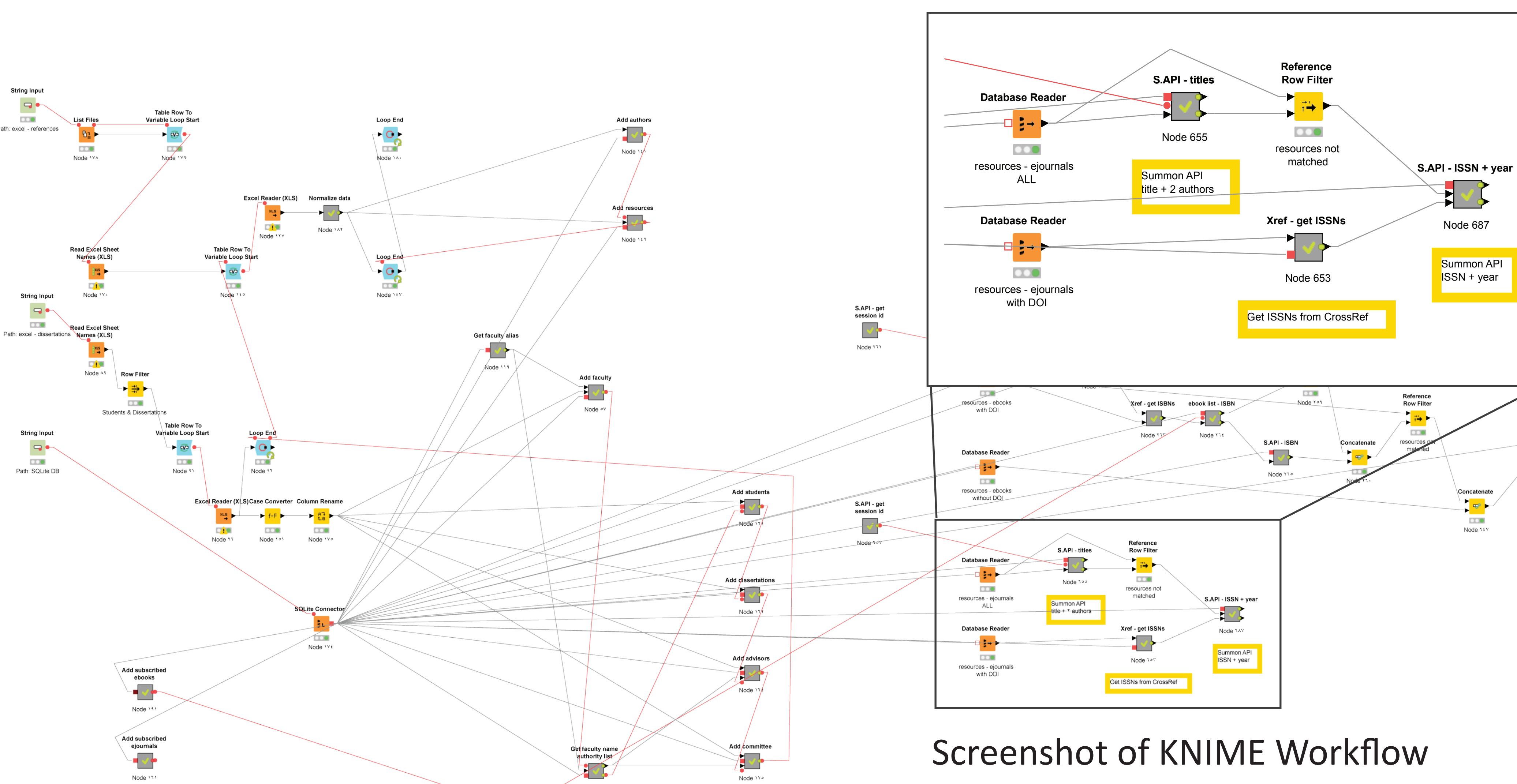
- KNIME Workflow



Citations to resources other than journal articles



Top 10 Journals	Citations	# Students Citing		
		Bio	EnSE	MarSE
1 Journal of Membrane Science	334		14	
2 Desalination	184		13	1
3 PNAS	182	14	6	4
4 Water Research	163	1	12	2
5 Science	157	14	13	5
6 Nature	138	13	10	5
7 PLoS ONE	113	13	3	5
8 Journal of Biological Chemistry	106	10	2	1
9 Macromolecules	100		5	
10 Nucleic Acids Research	74	6	2	3



Screenshot of KNIME Workflow

Findings

Collection

- Journal articles were the most cited (>90%)
- Citation patterns for other resources differ
- Top 7 of 10 Journals cited by 3 programs
- Age of publication cited is consistent across
- Most recent publications (0-5 years) account for 30% of citations
- 11 citations to 19th Century publications
- 20% of journal titles account for 73.6% of article citations (80/20% rule, Timms (2018))
- Over 80% of journals cited are covered in library collection

Information Literacy Program

- Use of citation managers for more efficient and accurate creation of reference lists
- Evaluating of information sources

Take-aways

- Rich available data from doctoral dissertation
- Citation analysis as a viable source of data to inform decisions on Collection and IL Program
- Not easy to obtain accurate coverage info from Discovery Platform

Future Steps

- Refinement of KNIME Workflow
- Remaining BESE doctoral dissertations
- Extend study to all doctoral dissertations
- Similar study on faculty publications

References

Barnett-Ellis, P., & Tang, Y. (2016). User-centered collection development: A citation analysis of graduate biology theses. *Collection Management*, 41(1), 3-22.

Eaton, A. (2008). hubgit [Computer software]. Available: <http://git.macropus.org/citation-finder/>

KNIME [Computer software]. (2018). Available: <https://www.knime.com/>

Timms, G. P. (2018). Citations and Citation Metrics in a Serial Assessment Using Master's Theses. *Collection Management*, 1-21.