University of CINCINNATI | LIBRARIES

Next Generation Machine Learning: The Evolution of the Library as Research Partner, Project Catalyst and Digital Integrator

Xuemao Wang
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Dean and University Librarian

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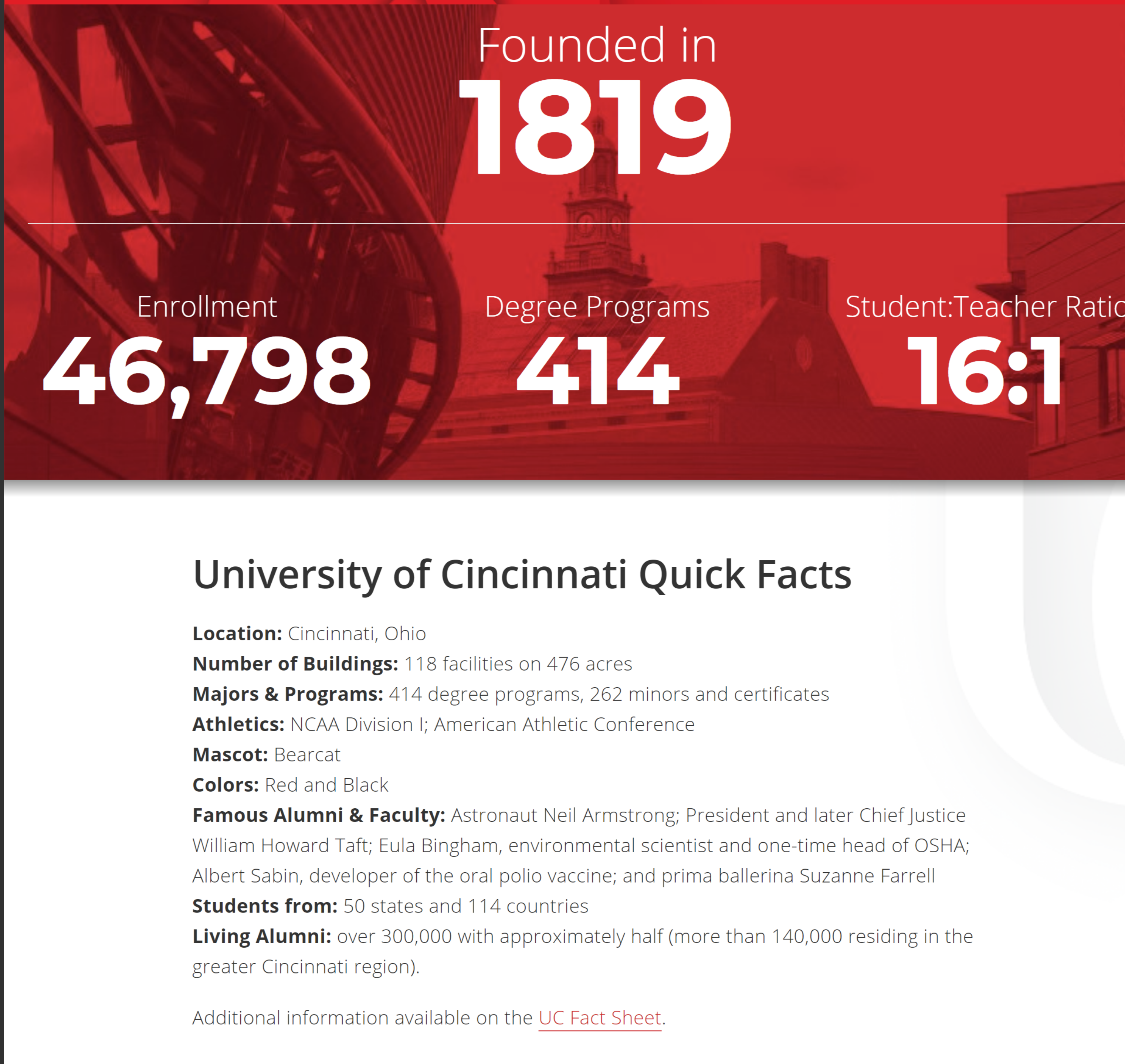
Director, Digital Scholarship Center

Kristen Burgess
Operational Manager
Digital Scholarship Center

www.libraries.uc.edu

CNI Fall 2020, November 17

University of Cincinnati



Founded in
1819

Enrollment
46,798

Degree Programs
414

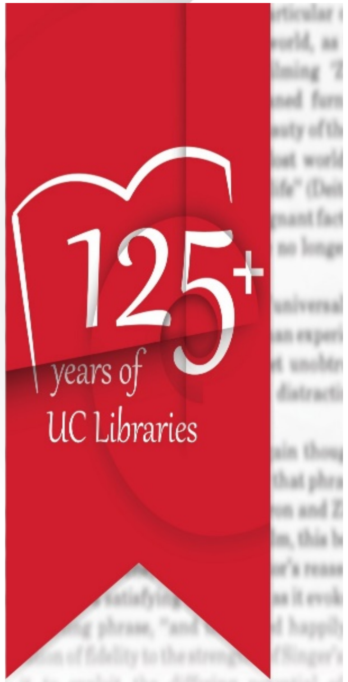
Student:Teacher Ratio
16:1

University of Cincinnati Quick Facts

Location: Cincinnati, Ohio
Number of Buildings: 118 facilities on 476 acres
Majors & Programs: 414 degree programs, 262 minors and certificates
Athletics: NCAA Division I; American Athletic Conference
Mascot: Bearcat
Colors: Red and Black
Famous Alumni & Faculty: Astronaut Neil Armstrong; President and later Chief Justice William Howard Taft; Eula Bingham, environmental scientist and one-time head of OSHA; Albert Sabin, developer of the oral polio vaccine; and prima ballerina Suzanne Farrell
Students from: 50 states and 114 countries
Living Alumni: over 300,000 with approximately half (more than 140,000 residing in the greater Cincinnati region).

Additional information available on the UC Fact Sheet.

University of Cincinnati Libraries



Archives & Rare Books Library

Chem-Bio Library

Classics Library

CCM Library

DAAP Library

CECH Library

CEAS Library

Geo-Math-Phys Library

Health Sciences Library

** Regional Libraries: Blue Ash, Clermont & Law*

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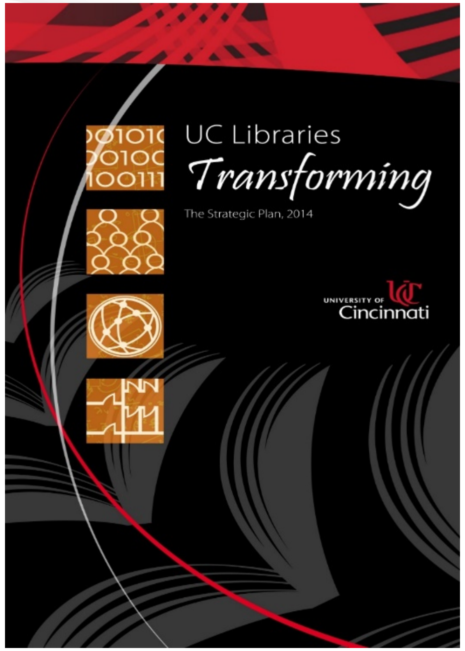
University of Cincinnati Libraries' Strategic Direction

Journey to Transformational Change



UC Libraries

Transforming

The Strategic Plan, 2014

The University of Cincinnati Libraries will become the ***globally engaged, intellectual commons of the university*** —positioning ourselves as the hub of **collaboration, digital innovation and scholarly endeavor** on campus.

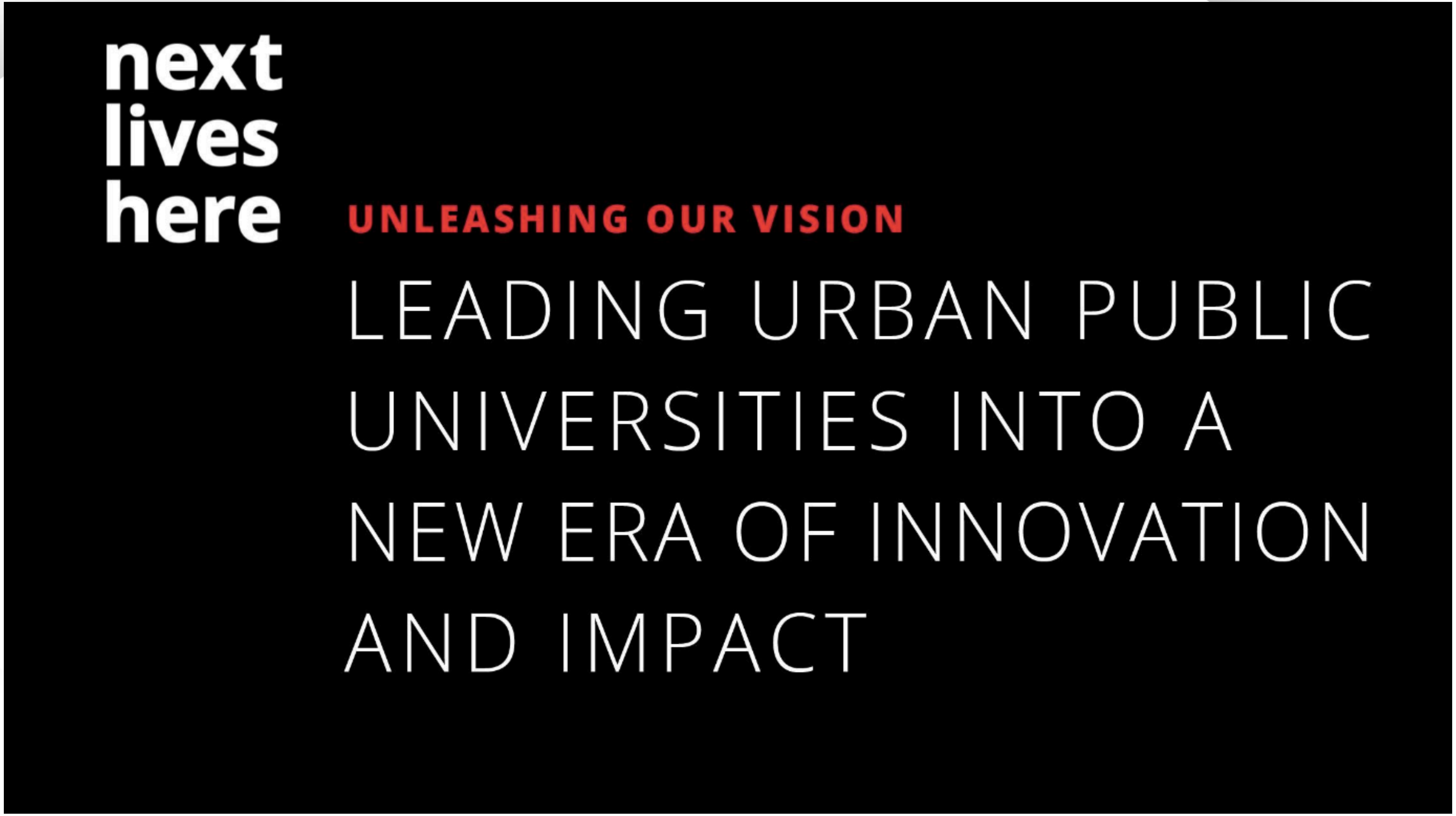
DIGITAL TECHNOLOGIES & INNOVATION

PEOPLE

SPACE

DATA to INFORMATION to KNOWLEDGE

Our Journey Towards a Great Public Research University – Boldly *Bearcat*

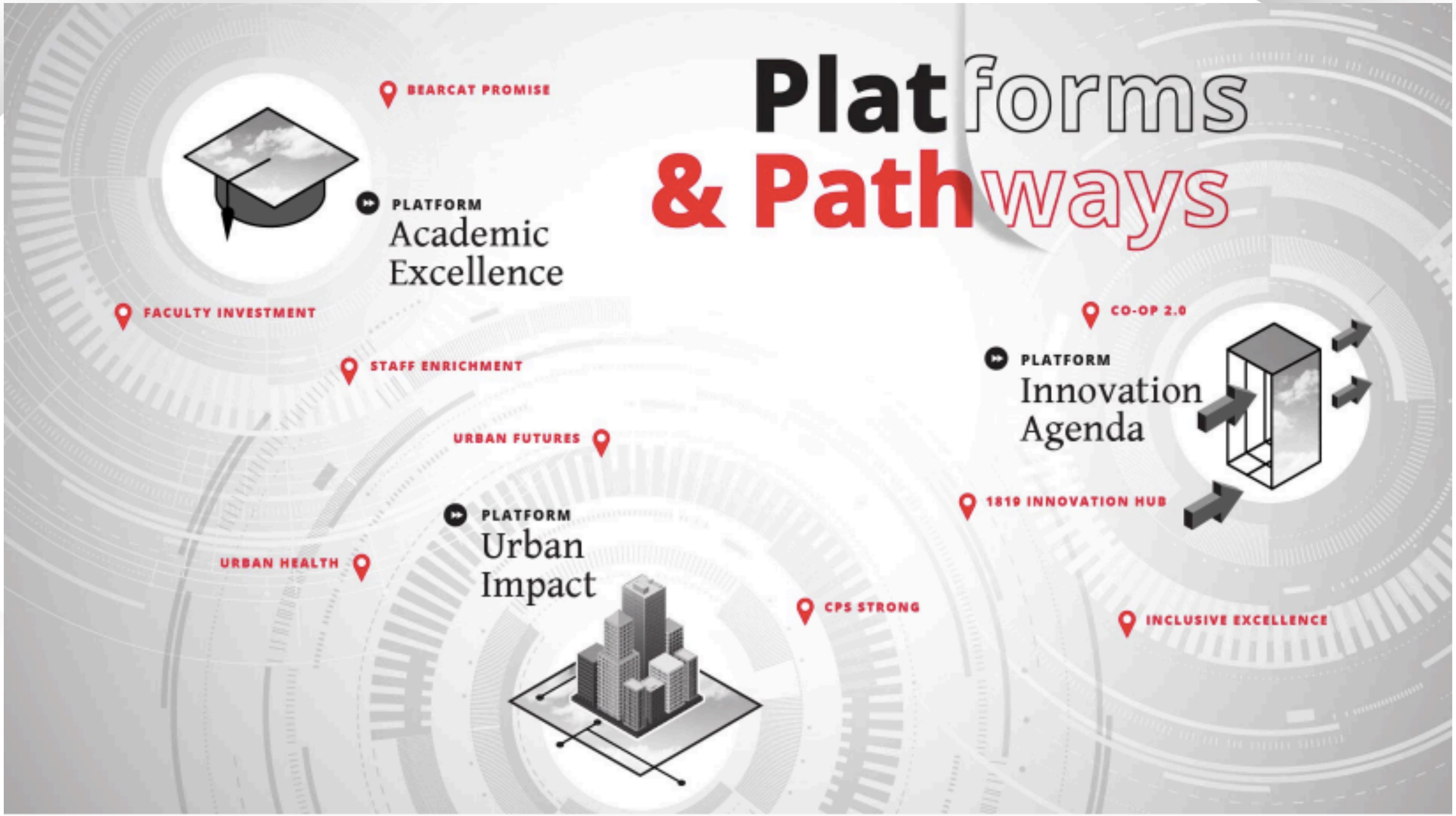


next lives here

UNLEASHING OUR VISION

LEADING URBAN PUBLIC UNIVERSITIES INTO A NEW ERA OF INNOVATION AND IMPACT

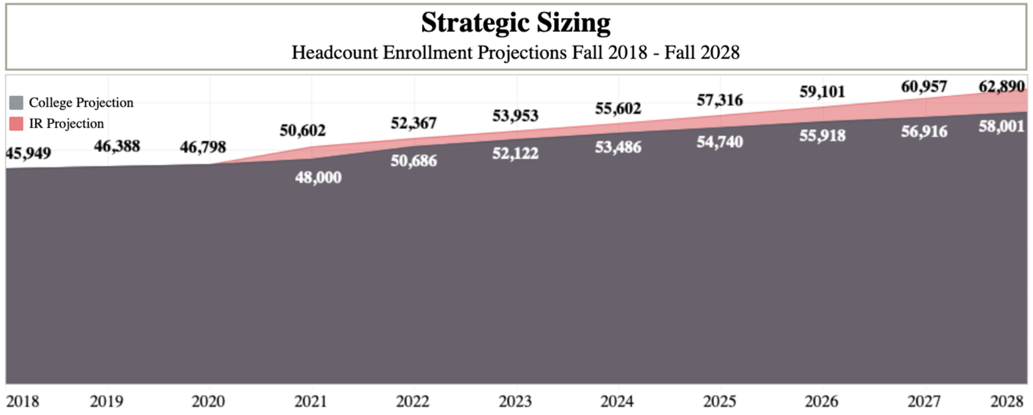
University of Cincinnati's Strategic Direction: Next Lives Here



UC Strategic Sizing Plan

University of Cincinnati | LIBRARIES

ENROLLMENT GROWTH 2018-2028


Strategic Sizing

Headcount Enrollment Projections Fall 2018 - Fall 2028

GROWTH IN ACCESS & QUALITY

TRENDS IN COLLEGE-LEVEL PROGRAM EFFORTS

COMPUTING & BIG DATA

HEALTH & WELLNESS

DIGITAL

INTERDISCIPLINARY

RETENTION

www.libraries.uc.edu

GROWTH IN EDUCATION

INSTITUTION-WIDE EFFORTS TO INCREASE ACCESS & QUALITY

BEARCAT PROMISE

CO-OP 2.0

CPS STRONG

LAUNCH UC

DIRECT ADMIT

NEXT/NOW SCHOLARSHIPS

VETERANS

ADULT LEARNING INSTITUTE

UC ONLINE

PROFESSIONAL MASTERS

PHD

URM PROGRAMS

RECRUITMENT, RETENTION, & COMPLETION

www.libraries.uc.edu

GROWTH IN URBAN/COMMUNITY IMPACT

TRENDS IN COLLEGE-LEVEL EFFORTS

CINCINNATI INNOVATION DISTRICT

CPS READINESS

SKILLING & CREDENTIALING

CLINICAL PARTNERSHIPS

THEMATIC AREAS

FOR STRATEGIC INVESTMENT

DATA SCIENCES

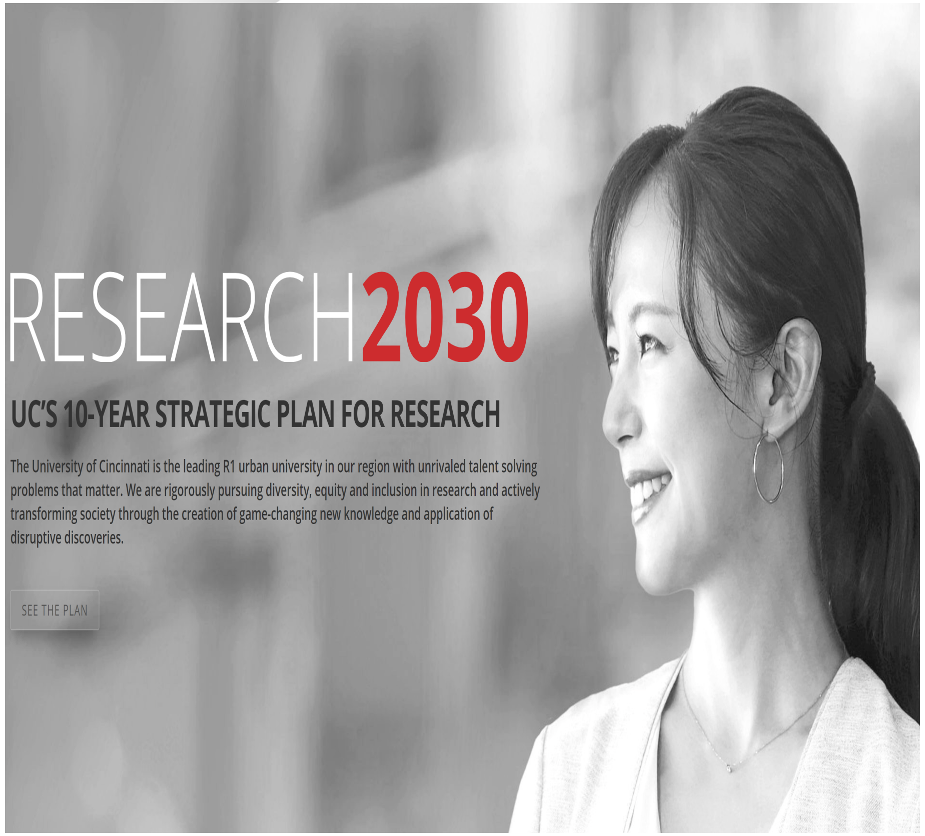
HEALTH & WELLNESS

CREATIVITY, EXPLORATION & JUSTICE IN A DIGITAL WORLD

HUMAN-ENVIRONMENT INTERACTIONS

UC Research 2030 Plan

University of CINCINNATI | LIBRARIES

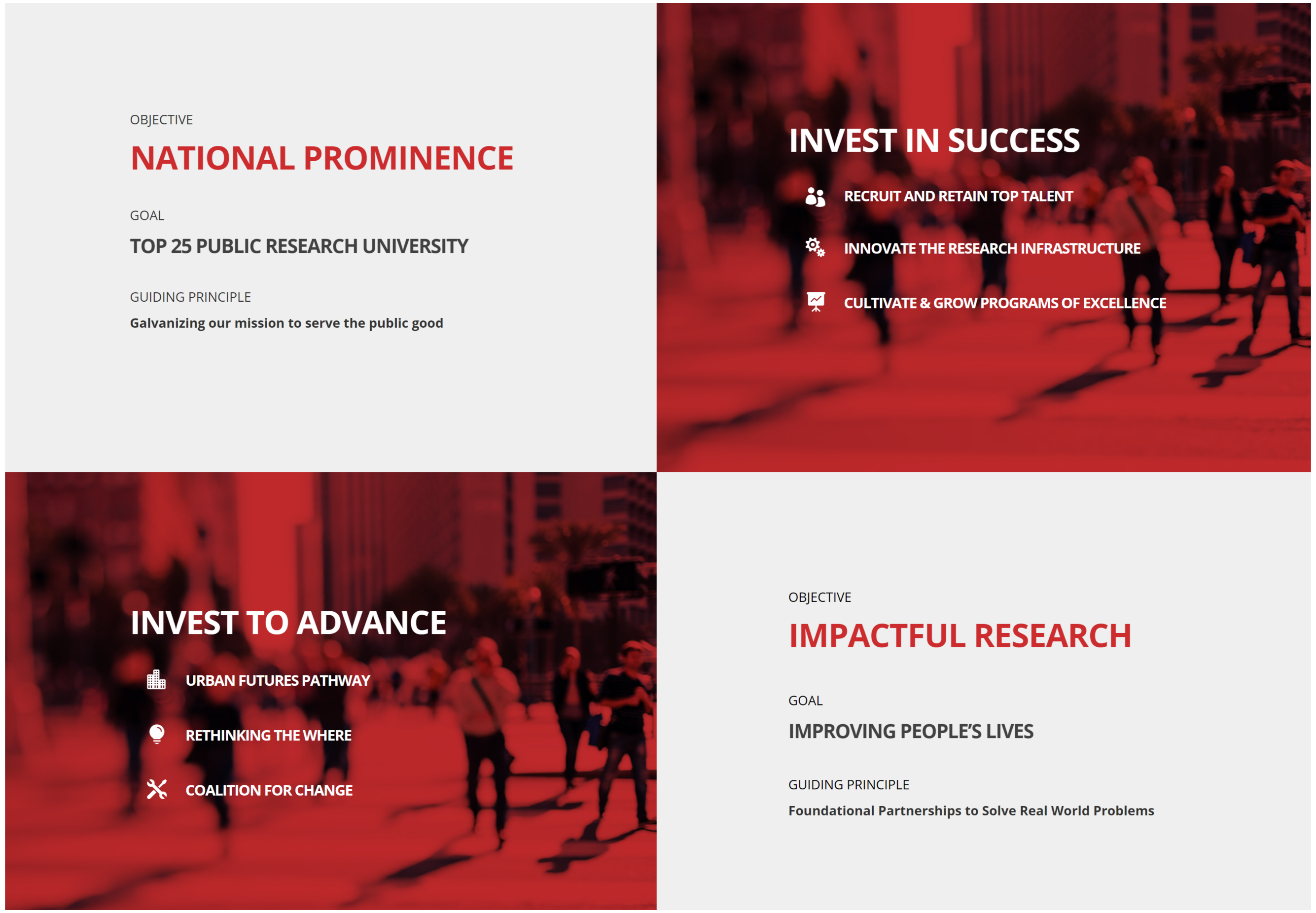


RESEARCH2030

UC'S 10-YEAR STRATEGIC PLAN FOR RESEARCH

The University of Cincinnati is the leading R1 urban university in our region with unrivaled talent solving problems that matter. We are rigorously pursuing diversity, equity and inclusion in research and actively transforming society through the creation of game-changing new knowledge and application of disruptive discoveries.

SEE THE PLAN



OBJECTIVE

NATIONAL PROMINENCE

GOAL

TOP 25 PUBLIC RESEARCH UNIVERSITY

GUIDING PRINCIPLE

Galvanizing our mission to serve the public good

INVEST IN SUCCESS

- RECRUIT AND RETAIN TOP TALENT
- INNOVATE THE RESEARCH INFRASTRUCTURE
- CULTIVATE & GROW PROGRAMS OF EXCELLENCE

INVEST TO ADVANCE

- URBAN FUTURES PATHWAY
- RETHINKING THE WHERE
- COALITION FOR CHANGE

OBJECTIVE

IMPACTFUL RESEARCH

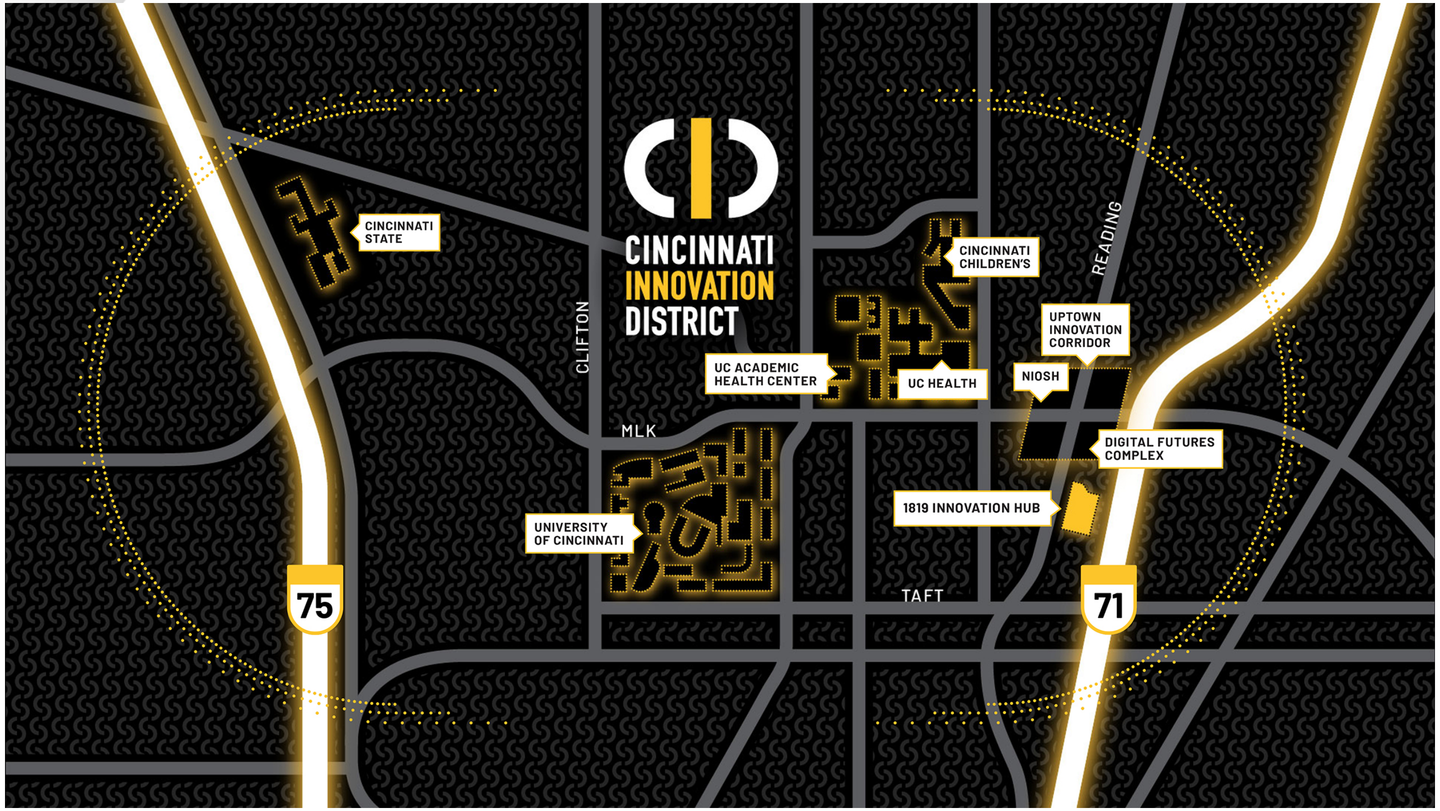
GOAL

IMPROVING PEOPLE'S LIVES

GUIDING PRINCIPLE

Foundational Partnerships to Solve Real World Problems

UC Innovation District



1819 University of CINCINNATI

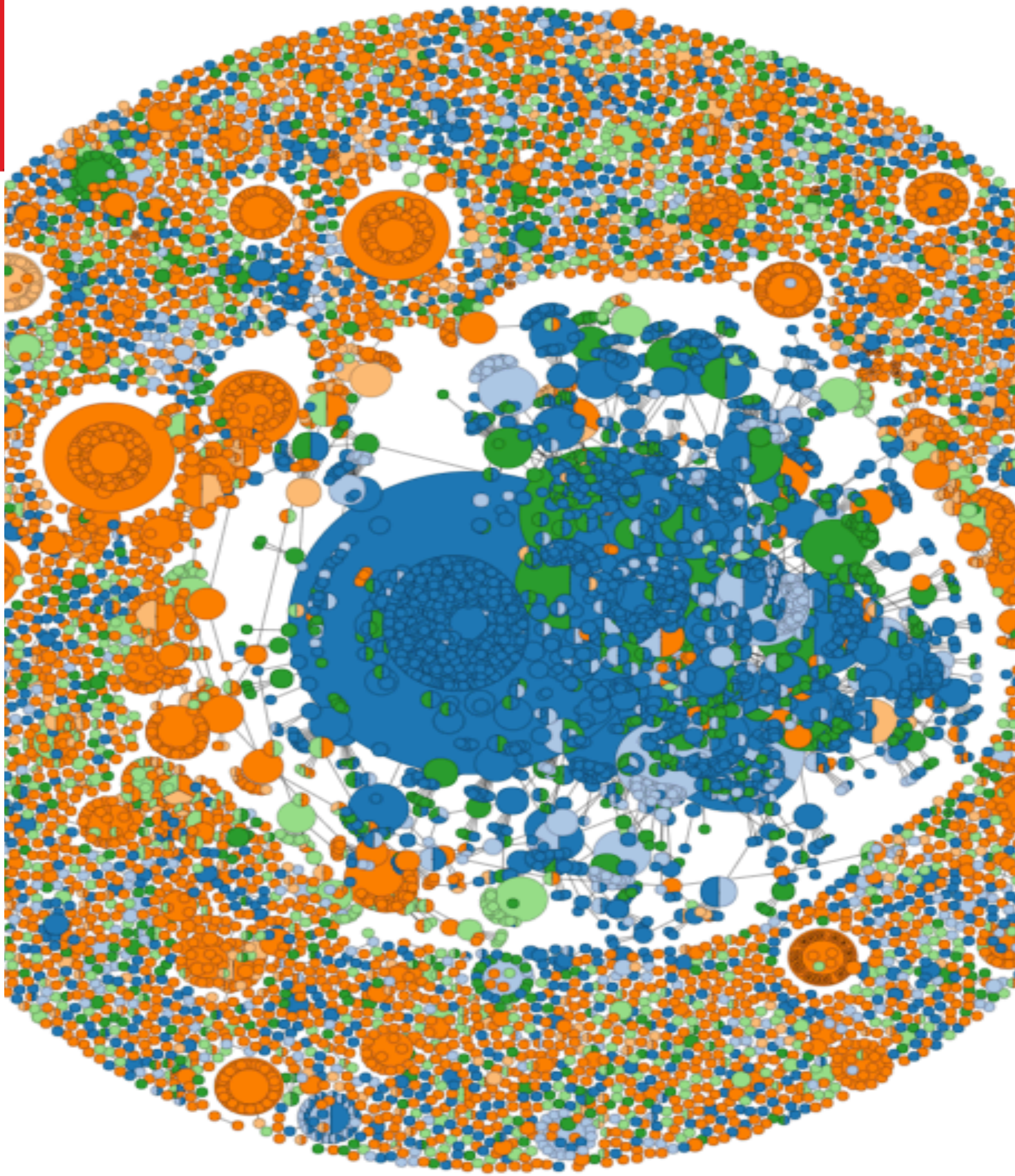
DSC: Mission

University of CINCINNATI | LIBRARIES

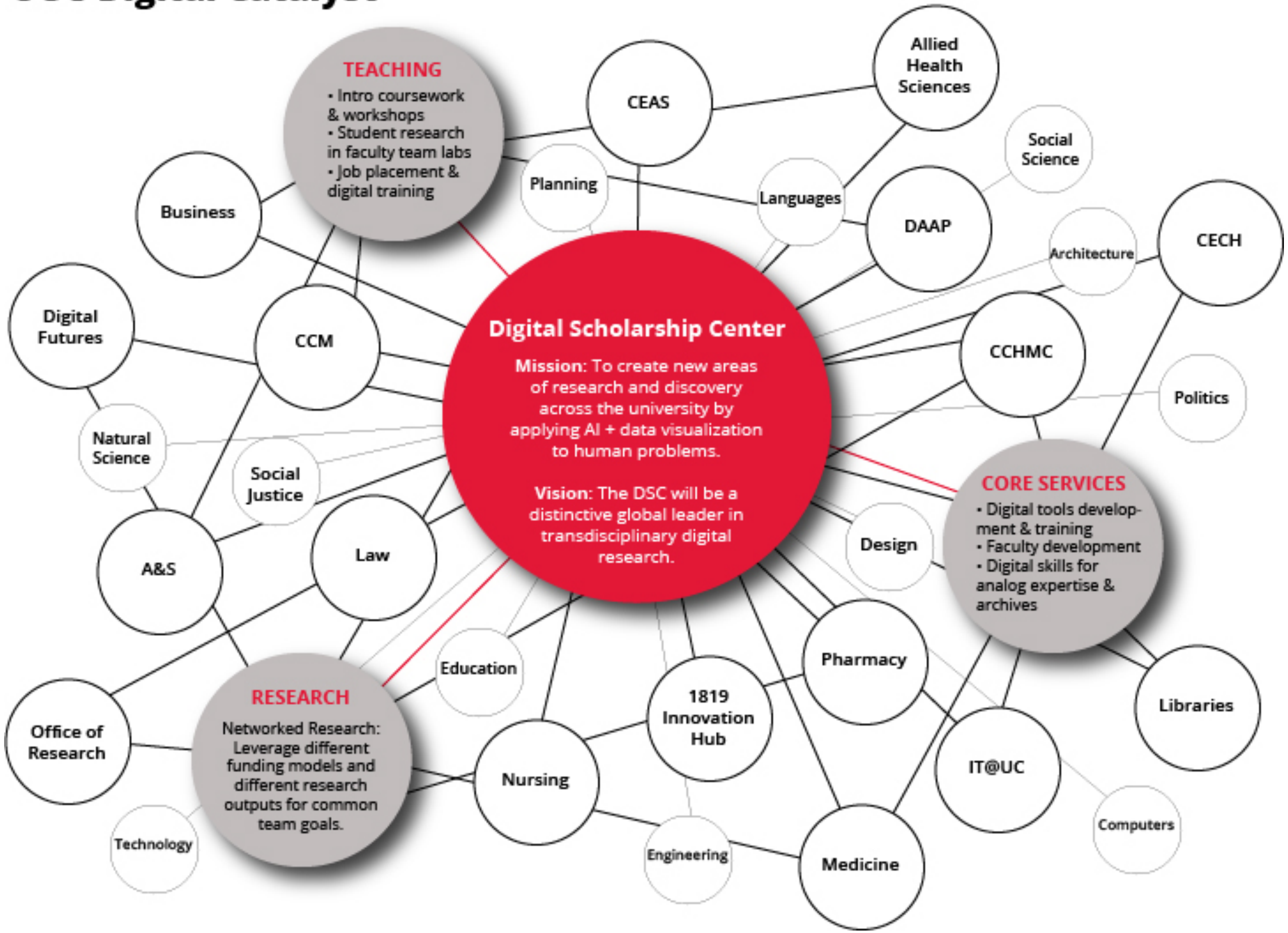
- Core mission - To break silos and cross wires across the university. We work at the intersection of data science, the arts and humanities, and the libraries.
- Academic Center (Libraries + Arts & Sciences)
- Mellon Digital Integrator (One of six, projects with eight colleges).
- UC Digital Futures Anchor Team

DSC: What We Do

- We are a technical catalyst: technology to activate new research
- Machine Learning and Human-Interpretable Data Visualization on Large Unstructured Datasets (Text, Image, Sound, Video)
- We translate between disciplines that rarely interact in order to connect content experts with technical experts.
- We provide resources and infrastructure to nurture research questions and collaborations that slip between the cracks of colleges and funding agencies.



UC's Digital Catalyst



Digital Scholarship Center

Mission: To create new areas of research and discovery across the university by applying AI + data visualization to human problems.

Vision: The DSC will be a distinctive global leader in transdisciplinary digital research.

TEACHING

- Intro coursework & workshops
- Student research in faculty team labs
- Job placement & digital training

CORE SERVICES

- Digital tools development & training
- Faculty development
- Digital skills for analog expertise & archives

RESEARCH

Networked Research: Leverage different funding models and different research outputs for common team goals.

CEAS

Allied Health Sciences

Social Science

Planning

Languages

DAAP

CECH

Architecture

Business

Digital Futures

CCM

CCHMC

Politics

Natural Science

Social Justice

Law

A&S

Design

Education

Pharmacy

1819 Innovation Hub

Libraries

Office of Research

Nursing

IT@UC

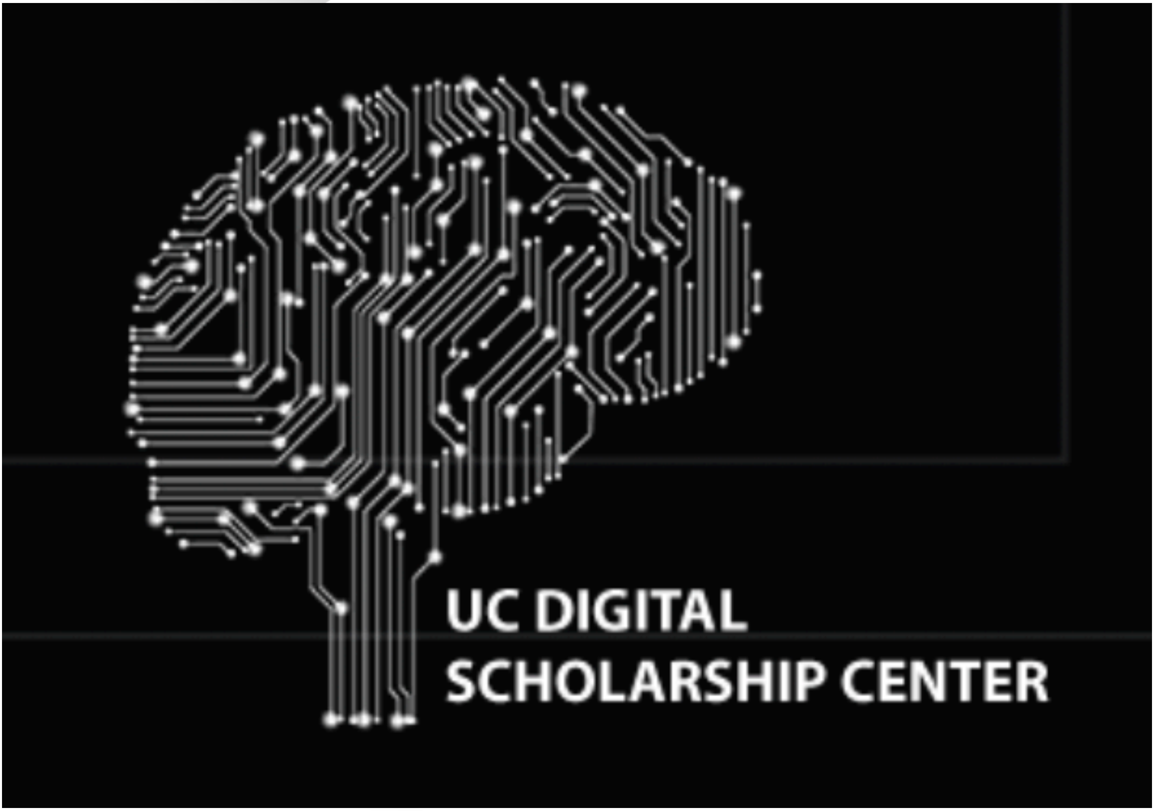
Computers

Technology

Engineering

Medicine

Digital Integration



R&DS

Research & Data Services

UC Libraries provides access to a wide range of Research Data and GIS services and resources for the campus community. Informationists and librarians are available to assist researchers in managing and preserving research data, finding and acquiring external data, and in utilizing GIS techniques and software. The library also provides a variety of computing and collaboration spaces to support researchers.

DSC: Who

- **DSC**

James Lee, Assc Vice Provost for Digital Scholarship and Assc Dean of Libraries, Director of DSC

Kristen Burgess, Operational Manager

Lindsay Nickels, Program Coordinator

Ezra Edgerton, Data Visualization Developer

Erin McCabe, Digital Scholarship Library Fellow

- **RDS**

Amy Koshoffer, Asst Director of Research & Data Services

Tiffany Grant, Asst Director of Research & Data Services

Rebecca Olson, Business and Social Science Informationist

Don Jason, Health Informationist

Ted Baldwin, Director, Science & Engineering Libraries

Dorcas Washington, Data Analyst Specialist

- **Graduate Students (English, Computer Science, Business Analytics)**

Digital Scholarship Center, Phase 1: From Initiative to Center

University of CINCINNATI | LIBRARIES

UC DIGITAL SCHOLARSHIP CENTER

A catalyst for collaborative, trans-disciplinary forms of research and teaching, bringing together humanistic methods with technical innovations.

The DSC has assembled research groups that genuinely span multiple disciplines, with people trained to think very differently about every step in the research process.

Teams are composed of true partners across entire research lifecycle:

- Formulation of research questions
- Pitching grant proposals
- Dataset cleanup and manipulation
- Data analysis and visualization
- Argument formation
- Publication of findings

In 2017, the DSC received $900,000 from the Andrew W. Mellon Foundation to expand this mission.

www.dsc.uc.edu

Digital Scholarship Center, Phase 2: Center Expansion

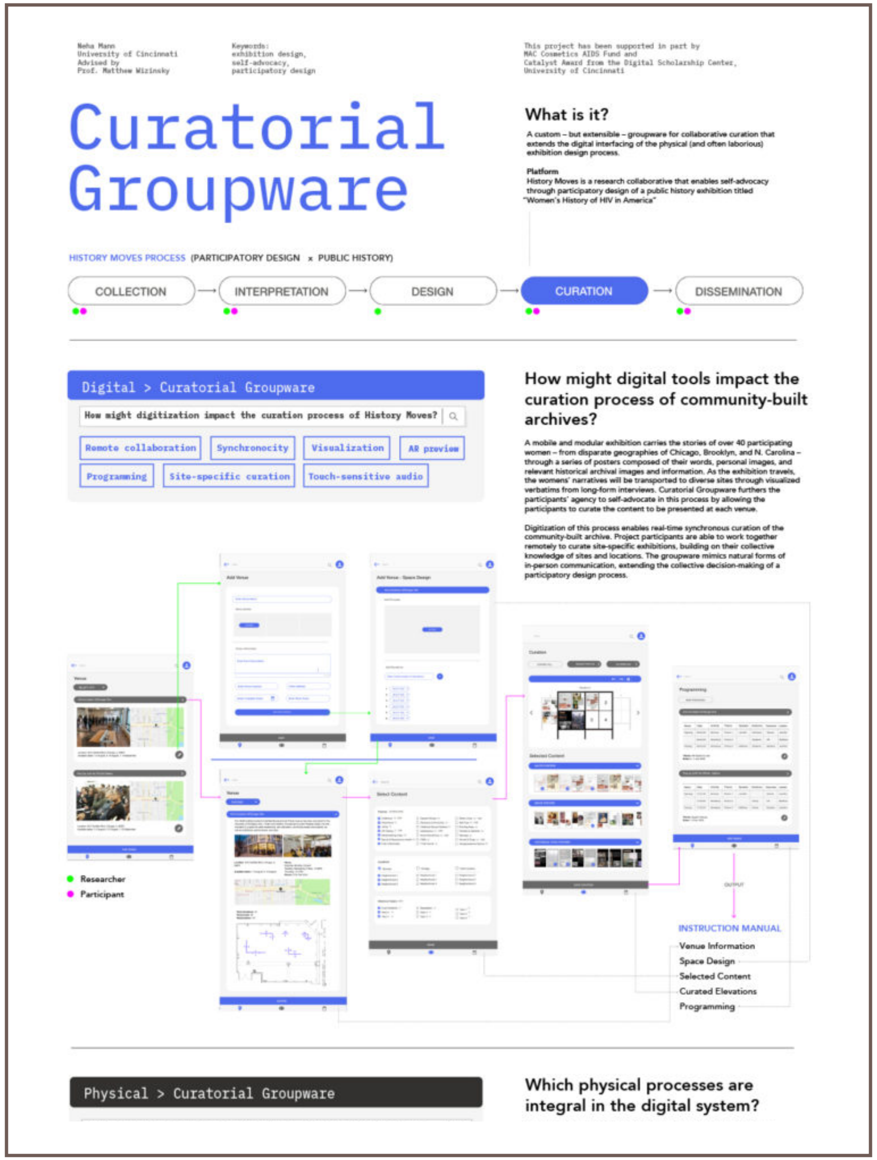
UC awarded a $700K grant from The Andrew W. Mellon Foundation

The renewal grant will advance and expand the Digital Scholarship Center's "catalyst" model

How?

1. Technical: Our platform adapts machine learning approaches to any text and image dataset for research projects. We apply these methods in a discipline-specific way.

2. Human: We assemble teams to nurture these unconventional transdisciplinary research questions and partnerships – every collaborator has different goals and culture.



Neha Mann
University of Cincinnati
Advised by
Prof. Matthew Wizinsky

Keywords:
exhibition design,
self-advocacy,
participatory design

This project has been supported in part by
MAC Cosmetics AIDS Fund and
Catalyst Award from the Digital Scholarship Center,
University of Cincinnati

Curatorial Groupware

What is it?

A custom – but extensible – groupware for collaborative curation that extends the digital interfacing of the physical (and often laborious) exhibition design process.

Platform
History Moves is a research collaborative that enables self-advocacy through participatory design of a public history exhibition titled "Women's History of HIV in America"

HISTORY MOVES PROCESS (PARTICIPATORY DESIGN x PUBLIC HISTORY)

COLLECTION → INTERPRETATION → DESIGN → CURATION → DISSEMINATION

Digital > Curatorial Groupware

How might digitization impact the curation process of History Moves?

Remote collaboration | Synchronocity | Visualization | AR preview | Programming | Site-specific curation | Touch-sensitive audio

How might digital tools impact the curation process of community-built archives?

A mobile and modular exhibition carries the stories of over 40 participating women – from disparate geographies of Chicago, Brooklyn, and N. Carolina – through a series of posters composed of their words, personal images, and relevant historical archival images and information. As the exhibition travels, the womens' narratives will be transported to diverse sites through visualized verbatims from long-form interviews. Curatorial Groupware furthers the participants' agency to self-advocate in this process by allowing the participants to curate the content to be presented at each venue.

Digitization of this process enables real-time synchronous curation of the community-built archive. Project participants are able to work together remotely to curate site-specific exhibitions, building on their collective knowledge of sites and locations. The groupware mimics natural forms of in-person communication, extending the collective decision-making of a participatory design process.

● Researcher
● Participant

OUTPUT

INSTRUCTION MANUAL
Venue Information
Space Design
Selected Content
Curated Elevations
Programming

Physical > Curatorial Groupware

Which physical processes are integral in the digital system?

Digital Integration: Technical Mission

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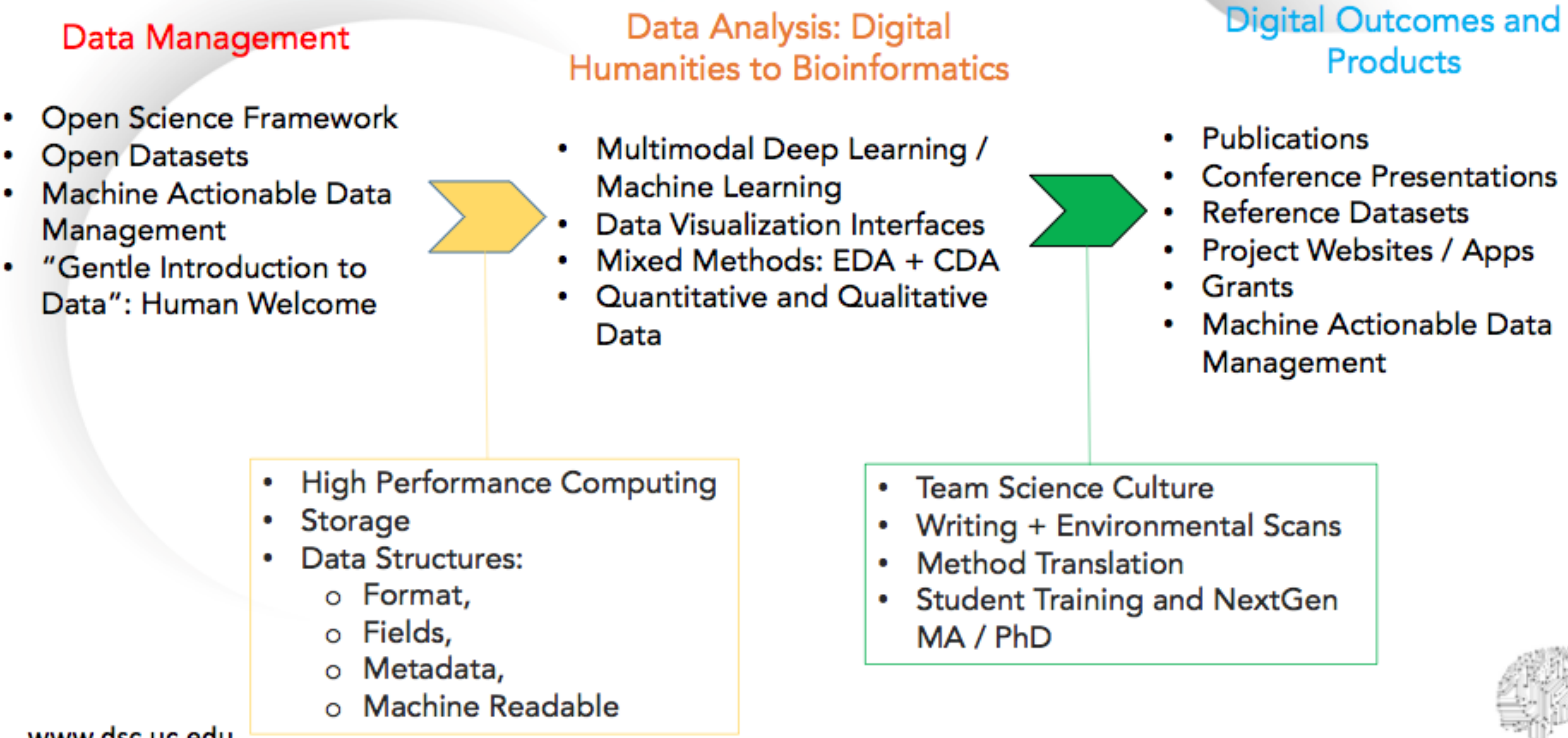

Data Management

- Open Science Framework
- Open Datasets
- Machine Actionable Data Management
- "Gentle Introduction to Data": Human Welcome

Data Analysis: Digital Humanities to Bioinformatics

- Multimodal Deep Learning / Machine Learning
- Data Visualization Interfaces
- Mixed Methods: EDA + CDA
- Quantitative and Qualitative Data

Digital Outcomes and Products

- Publications
- Conference Presentations
- Reference Datasets
- Project Websites / Apps
- Grants
- Machine Actionable Data Management

- High Performance Computing
- Storage
- Data Structures:
  - Format,
  - Fields,
  - Metadata,
  - Machine Readable

- Team Science Culture
- Writing + Environmental Scans
- Method Translation
- Student Training and NextGen MA / PhD

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Human Centered ML Needs Data Visualization

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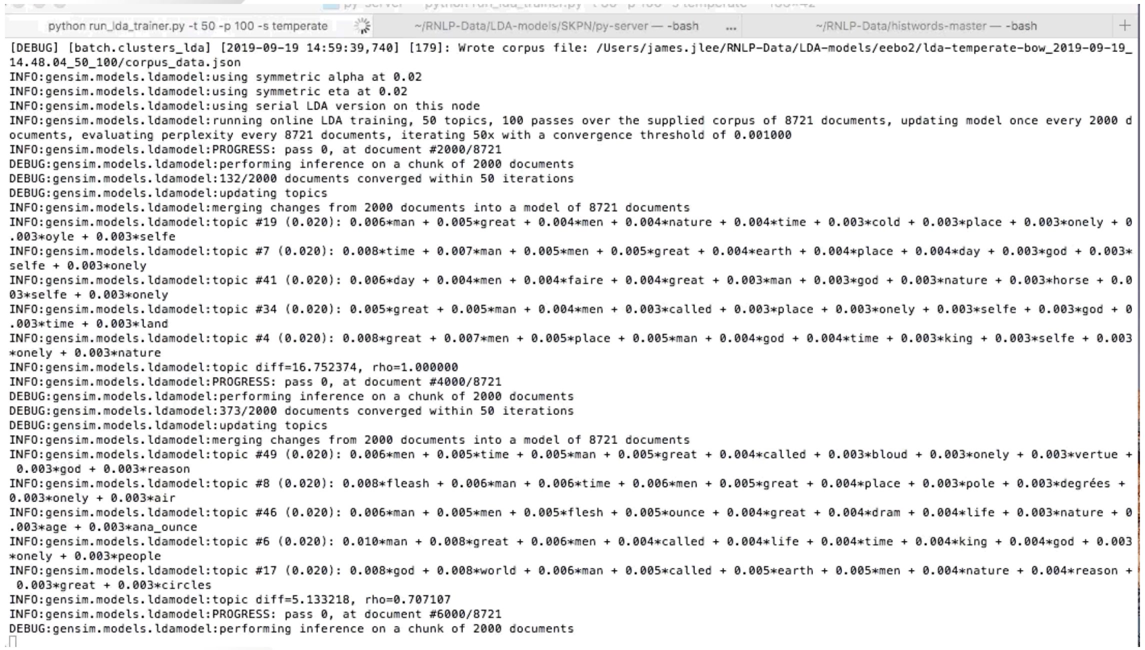
python run_lda_trainer.py -t 50 -p 100 -s temperate
~/RNLP-Data/LDA-models/SKPN/py-server — -bash
~/RNLP-Data/histwords-master — -bash

```
[DEBUG] [batch.clusters_lda] [2019-09-19 14:59:39,740] [179]: Wrote corpus file: /Users/james.jlee/RNLP-Data/LDA-models/eebo2/lda-temperate-bow_2019-09-19_
14.48.04_50_100/corpus_data.json
INFO:gensim.models.ldamodel:using symmetric alpha at 0.02
INFO:gensim.models.ldamodel:using symmetric eta at 0.02
INFO:gensim.models.ldamodel:using serial LDA version on this node
INFO:gensim.models.ldamodel:running online LDA training, 50 topics, 100 passes over the supplied corpus of 8721 documents, updating model once every 2000 d
ocuments, evaluating perplexity every 8721 documents, iterating 50x with a convergence threshold of 0.001000
INFO:gensim.models.ldamodel:PROGRESS: pass 0, at document #2000/8721
DEBUG:gensim.models.ldamodel:performing inference on a chunk of 2000 documents
DEBUG:gensim.models.ldamodel:132/2000 documents converged within 50 iterations
DEBUG:gensim.models.ldamodel:updating topics
INFO:gensim.models.ldamodel:merging changes from 2000 documents into a model of 8721 documents
INFO:gensim.models.ldamodel:topic #19 (0.020): 0.006*man + 0.005*great + 0.004*men + 0.004*nature + 0.004*time + 0.003*cold + 0.003*place + 0.003*onely + 0
.003*oyle + 0.003*selfe
INFO:gensim.models.ldamodel:topic #7 (0.020): 0.008*time + 0.007*man + 0.005*men + 0.005*great + 0.004*earth + 0.004*place + 0.004*day + 0.003*god + 0.003*
selfe + 0.003*onely
INFO:gensim.models.ldamodel:topic #41 (0.020): 0.006*day + 0.004*men + 0.004*faire + 0.004*great + 0.003*man + 0.003*god + 0.003*nature + 0.003*horse + 0.0
03*selfe + 0.003*onely
INFO:gensim.models.ldamodel:topic #34 (0.020): 0.005*great + 0.005*man + 0.004*men + 0.003*called + 0.003*place + 0.003*onely + 0.003*selfe + 0.003*god + 0
.003*time + 0.003*land
INFO:gensim.models.ldamodel:topic #4 (0.020): 0.008*great + 0.007*men + 0.005*place + 0.005*man + 0.004*god + 0.004*time + 0.003*king + 0.003*selfe + 0.003
*onely + 0.003*nature
INFO:gensim.models.ldamodel:topic diff=16.752374, rho=1.000000
INFO:gensim.models.ldamodel:PROGRESS: pass 0, at document #4000/8721
DEBUG:gensim.models.ldamodel:performing inference on a chunk of 2000 documents
DEBUG:gensim.models.ldamodel:373/2000 documents converged within 50 iterations
DEBUG:gensim.models.ldamodel:updating topics
INFO:gensim.models.ldamodel:merging changes from 2000 documents into a model of 8721 documents
INFO:gensim.models.ldamodel:topic #49 (0.020): 0.006*men + 0.005*time + 0.005*man + 0.005*great + 0.004*called + 0.003*bloud + 0.003*onely + 0.003*vertue +
 0.003*god + 0.003*reason
INFO:gensim.models.ldamodel:topic #8 (0.020): 0.008*fleash + 0.006*man + 0.006*time + 0.006*men + 0.005*great + 0.004*place + 0.003*pole + 0.003*degrées +
0.003*onely + 0.003*air
INFO:gensim.models.ldamodel:topic #46 (0.020): 0.006*man + 0.005*men + 0.005*flesh + 0.005*ounce + 0.004*great + 0.004*dram + 0.004*life + 0.003*nature + 0
.003*age + 0.003*ana_ounce
INFO:gensim.models.ldamodel:topic #6 (0.020): 0.010*man + 0.008*great + 0.006*men + 0.004*called + 0.004*life + 0.004*time + 0.004*king + 0.004*god + 0.003
*onely + 0.003*people
INFO:gensim.models.ldamodel:topic #17 (0.020): 0.008*god + 0.008*world + 0.006*man + 0.005*called + 0.005*earth + 0.005*men + 0.004*nature + 0.004*reason +
 0.003*great + 0.003*circles
INFO:gensim.models.ldamodel:topic diff=5.133218, rho=0.707107
INFO:gensim.models.ldamodel:PROGRESS: pass 0, at document #6000/8721
DEBUG:gensim.models.ldamodel:performing inference on a chunk of 2000 documents
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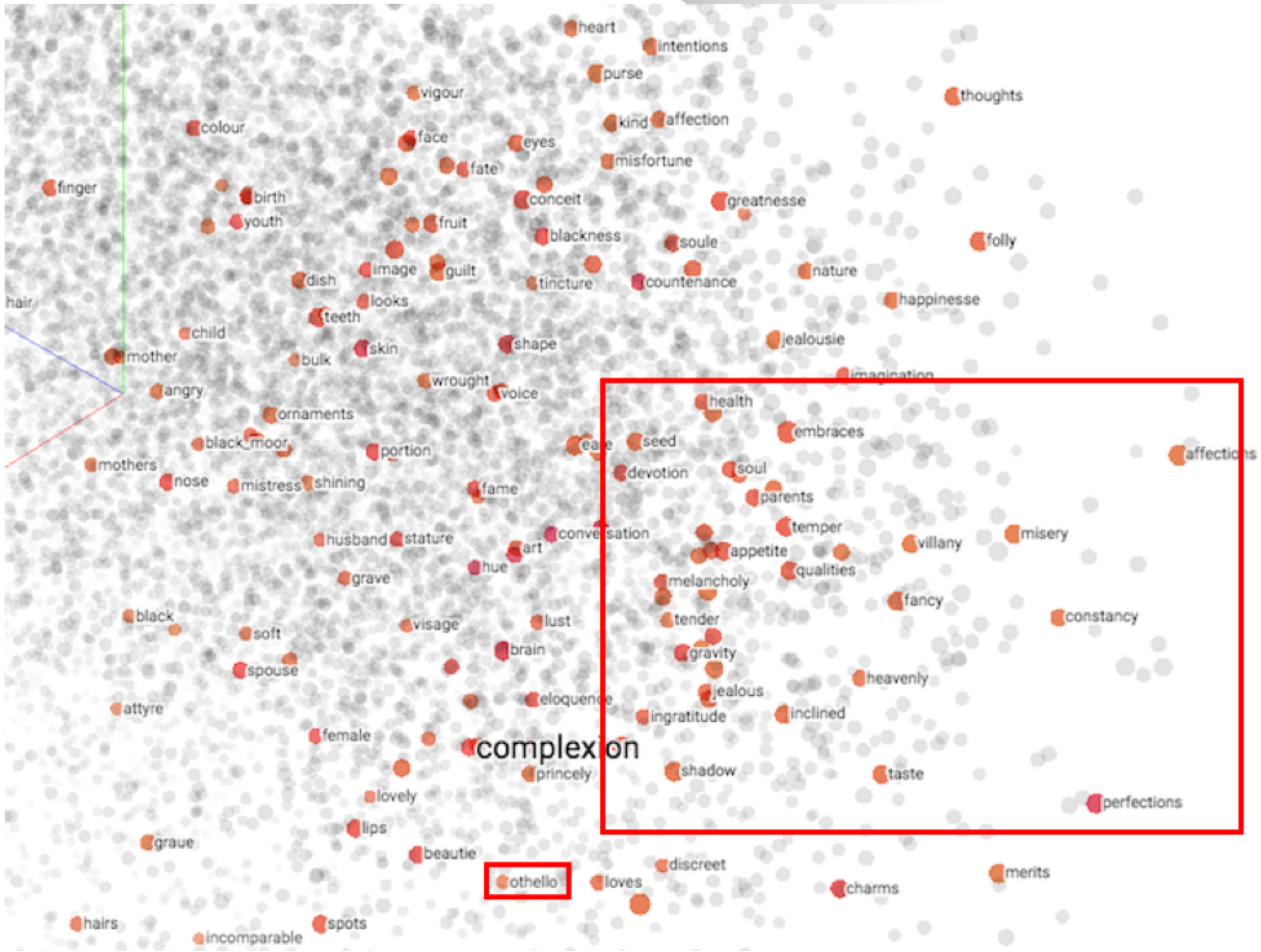

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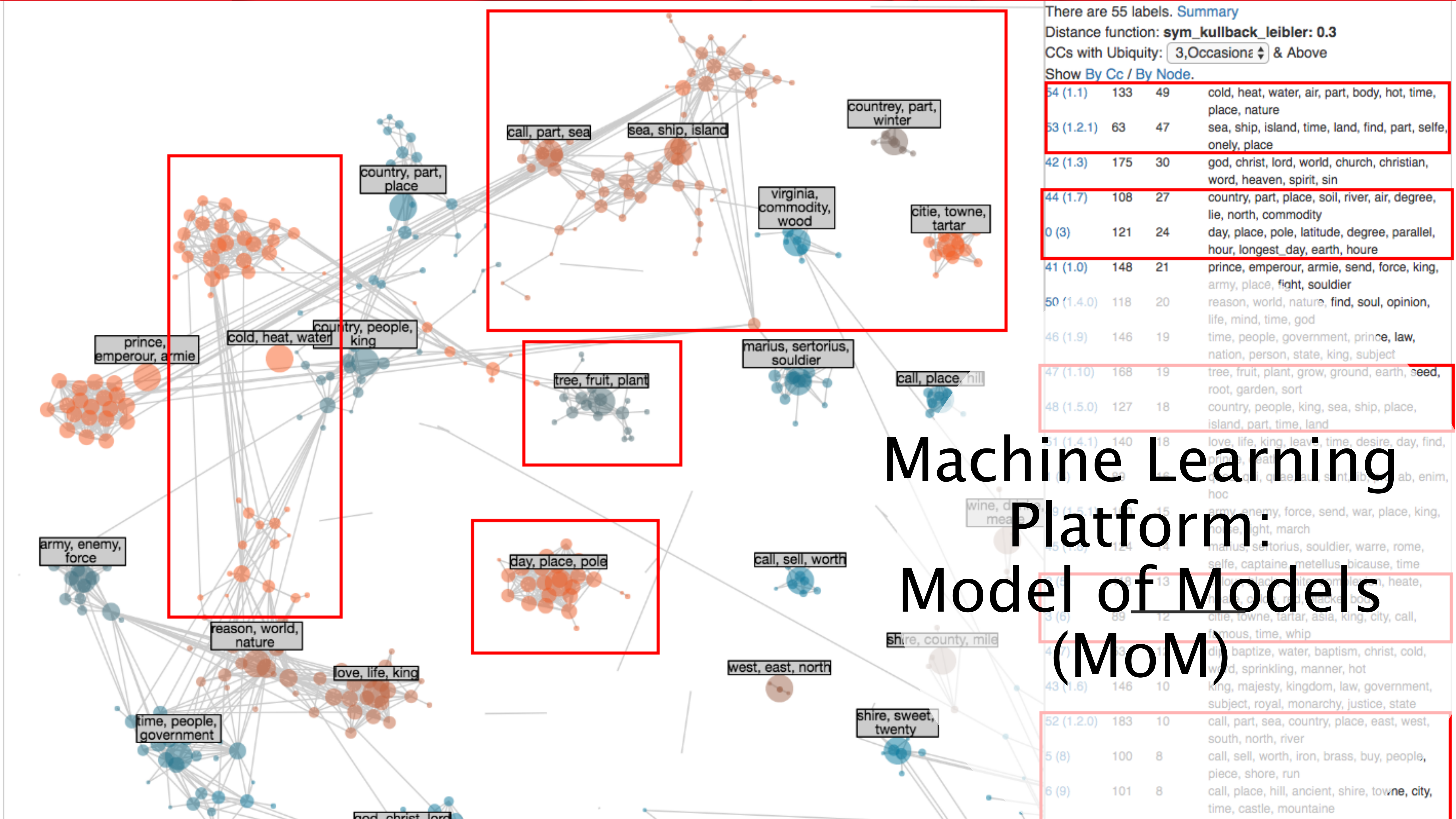
Machine Learning Platform: Model of Models (MoM)



There are 55 labels. Summary

Distance function: **sym_kullback_leibler: 0.3**

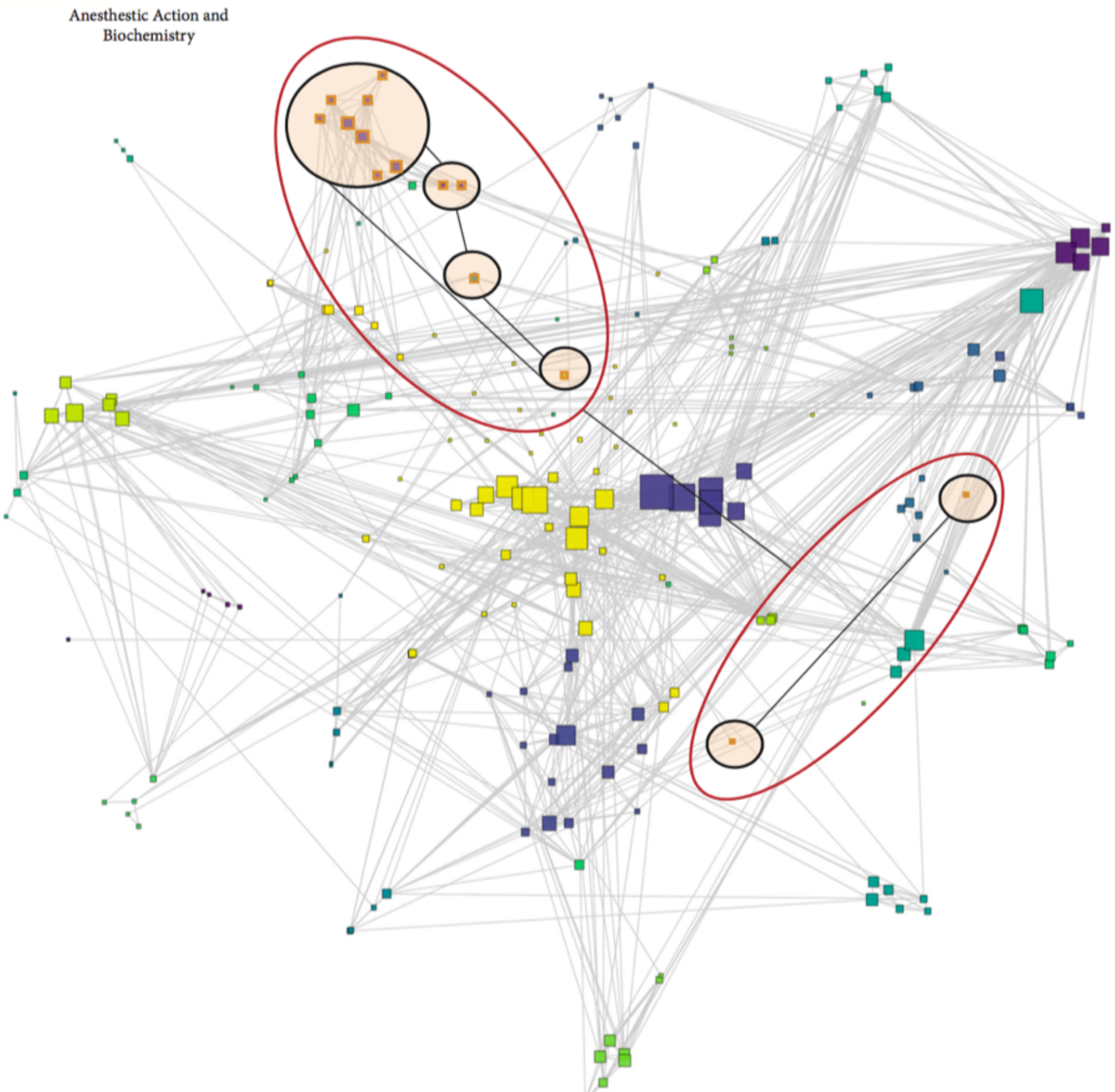
CCs with Ubiquity: 3,Occasiona & Above

Show By Cc / By Node.

54 (1.1)	133	49	cold, heat, water, air, part, body, hot, time, place, nature
53 (1.2.1)	63	47	sea, ship, island, time, land, find, part, selfe, onely, place
42 (1.3)	175	30	god, christ, lord, world, church, christian, word, heaven, spirit, sin
44 (1.7)	108	27	country, part, place, soil, river, air, degree, lie, north, commodity
0 (3)	121	24	day, place, pole, latitude, degree, parallel, hour, longest_day, earth, houre
41 (1.0)	148	21	prince, emperour, armie, send, force, king, army, place, fight, souldier
50 (1.4.0)	118	20	reason, world, nature, find, soul, opinion, life, mind, time, god
46 (1.9)	146	19	time, people, government, prince, law, nation, person, state, king, subject
47 (1.10)	168	19	tree, fruit, plant, grow, ground, earth, seed, root, garden, sort
48 (1.5.0)	127	18	country, people, king, sea, ship, place, island, part, time, land
51 (1.4.1)	140	18	love, life, king, leave, time, desire, day, find, prince, death
1 (4)	89	16	quod, qui, quae, aut, sunt, lib, [illegible] ab, enim, hoc
49 (1.5.1)	[illegible]	15	army, enemy, force, send, war, place, king, horse, fight, march
45 (1.8)	124	14	marius, sertorius, souldier, warre, rome, selfe, captaine, metellus, bicause, time
2 (5)	118	13	colour, black, white, complexion, heate, heate, colde, red, blacke, body
3 (6)	89	12	citie, towne, tartar, asia, king, city, call, famous, time, whip
4 (7)	[illegible]	12	dip, baptize, water, baptism, christ, cold, word, sprinkling, manner, hot
43 (1.6)	146	10	king, majesty, kingdom, law, government, subject, royal, monarchy, justice, state
52 (1.2.0)	183	10	call, part, sea, country, place, east, west, south, north, river
5 (8)	100	8	call, sell, worth, iron, brass, buy, people, piece, shore, run
6 (9)	101	8	call, place, hill, ancient, shire, towne, city, time, castle, mountaine

Machine Learning Platform: Model of Models (MoM)

- Two machine learning strategies used to observe the latent patterns in large corpora.
  - Topic modeling (Latent Dirichlet Allocation – LDA)
  - Word embeddings (word2vec, BERT)
- Aggregates multiple models in parallel to compare word usage across the parallel models.
- Clusters integrate topics from the 6 models into an aggregated "model of models":
  - Confirm consistent topics across all models
  - Reveal underrepresented topics that may not have appeared in a single model representation.
- Distributed parallel approach increases user confidence and interpretability of our models by bringing the most stable topics to the top tier of the model results



Machine Learning Platform: Trust the Human for Validation

- Internal validation: Topic Coherence

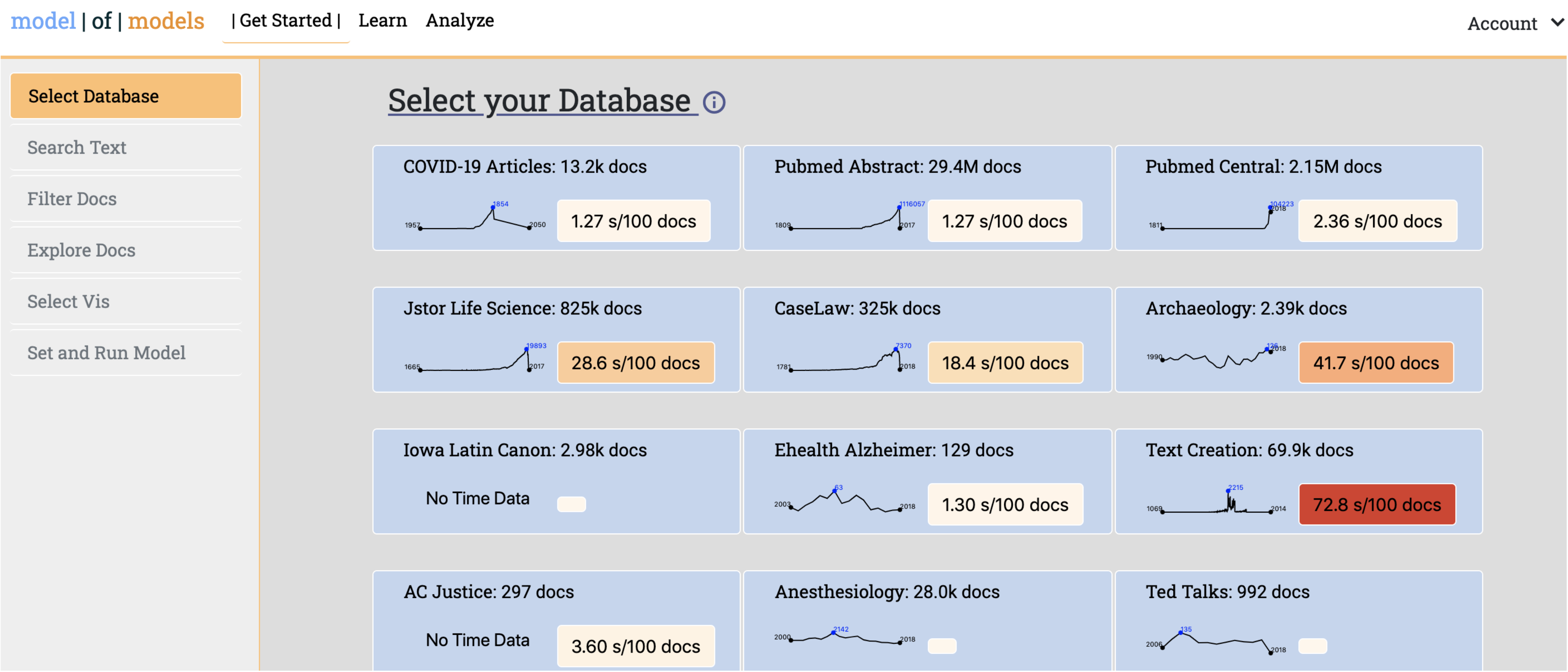
- External validation:
  - Subject matter expert tagging of randomized 20% (N>1000) corpus
  - Blind human coder panel – Percentage agreement

- Replicability:
  - Pattern recognition capabilities of NLP methods as an information retrieval – and not a black-box classification – approach.
  - Provide models capable of evaluation by our panel of multiple independent coders.
  - Parallel replicates in each model (6-20 runs)

- Hybrid ML approach:
  - Human judgment of subject matter experts to verify and tag the model result – outperforms a purely machine-based analysis.
  - Semi-supervised learning for classification.

Interoperability with Datasets, Medium and Large

- HTRC Extracted Features, JSTOR Data for Research, Chronicling America, Text Creation Partnership, Harvard Case Law.
- PubMed + PubMed Central, US Patent Claims, EPIC EHR FHIR Data Structures (IRB Approved).
- Social Media (Twitter, Instagram, Reddit).
- Small corpora: we'll help you read them.



Select your Database

COVID-19 Articles: 13.2k docs — 1.27 s/100 docs

Pubmed Abstract: 29.4M docs — 1.27 s/100 docs

Pubmed Central: 2.15M docs — 2.36 s/100 docs

Jstor Life Science: 825k docs — 28.6 s/100 docs

CaseLaw: 325k docs — 18.4 s/100 docs

Archaeology: 2.39k docs — 41.7 s/100 docs

Iowa Latin Canon: 2.98k docs — No Time Data

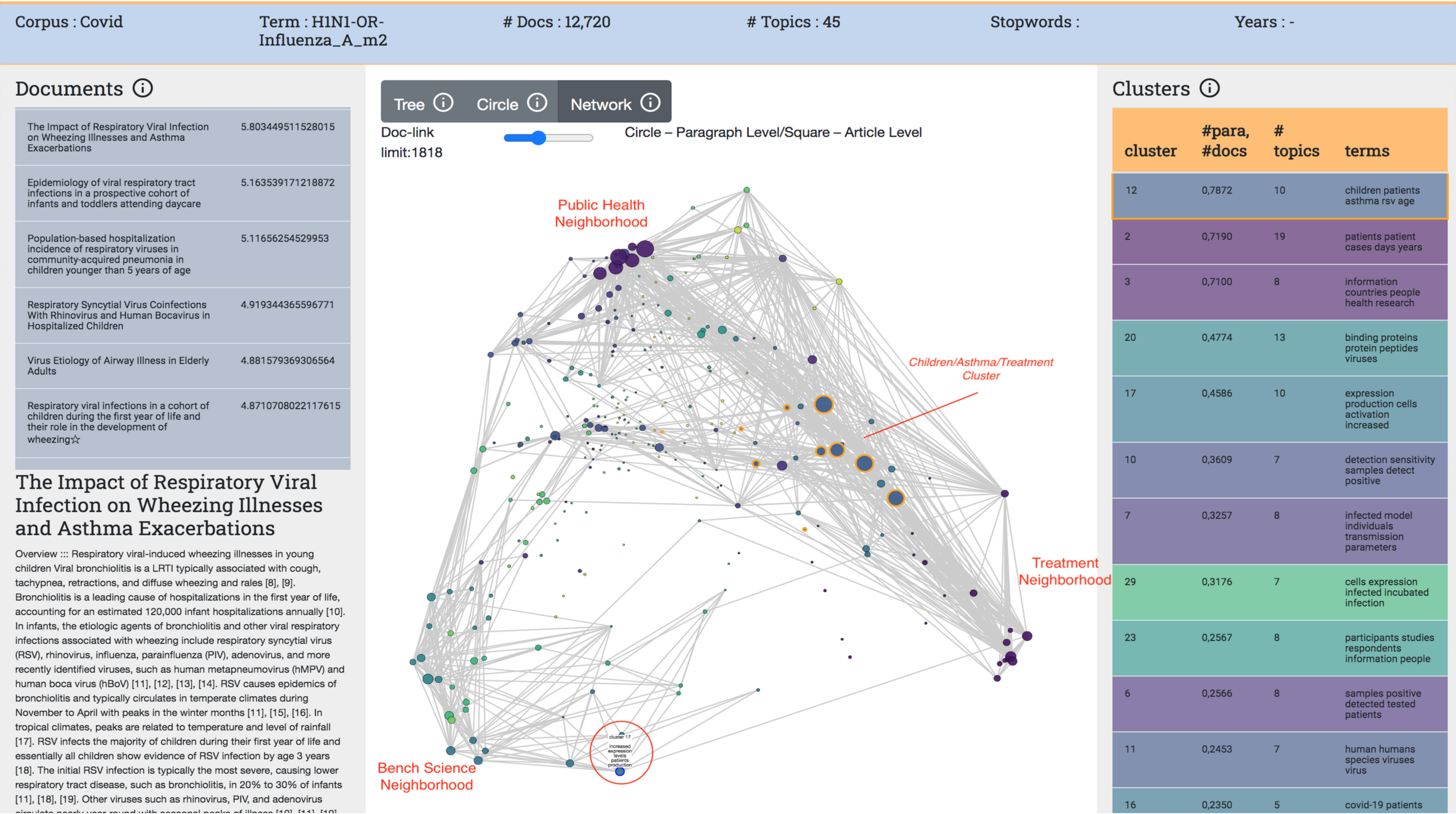
Ehealth Alzheimer: 129 docs — 1.30 s/100 docs

Text Creation: 69.9k docs — 72.8 s/100 docs

AC Justice: 297 docs — No Time Data — 3.60 s/100 docs

Anesthesiology: 28.0k docs

Ted Talks: 992 docs



Corpus : Covid | Term : H1N1-OR-Influenza_A_m2 | # Docs : 12,720 | # Topics : 45 | Stopwords : | Years : -

Documents ⓘ

The Impact of Respiratory Viral Infection on Wheezing Illnesses and Asthma Exacerbations	5.803449511528015
Epidemiology of viral respiratory tract infections in a prospective cohort of infants and toddlers attending daycare	5.163539171218872
Population-based hospitalization incidence of respiratory viruses in community-acquired pneumonia in children younger than 5 years of age	5.11656254529953
Respiratory Syncytial Virus Coinfections With Rhinovirus and Human Bocavirus in Hospitalized Children	4.919344365596771
Virus Etiology of Airway Illness in Elderly Adults	4.881579369306564
Respiratory viral infections in a cohort of children during the first year of life and their role in the development of wheezing☆	4.8710708022117615

The Impact of Respiratory Viral Infection on Wheezing Illnesses and Asthma Exacerbations

Overview ::: Respiratory viral-induced wheezing illnesses in young children Viral bronchiolitis is a LRTI typically associated with cough, tachypnea, retractions, and diffuse wheezing and rales [8], [9]. Bronchiolitis is a leading cause of hospitalizations in the first year of life, accounting for an estimated 120,000 infant hospitalizations annually [10]. In infants, the etiologic agents of bronchiolitis and other viral respiratory infections associated with wheezing include respiratory syncytial virus (RSV), rhinovirus, influenza, parainfluenza (PIV), adenovirus, and more recently identified viruses, such as human metapneumovirus (hMPV) and human boca virus (hBoV) [11], [12], [13], [14]. RSV causes epidemics of bronchiolitis and typically circulates in temperate climates during November to April with peaks in the winter months [11], [15], [16]. In tropical climates, peaks are related to temperature and level of rainfall [17]. RSV infects the majority of children during their first year of life and essentially all children show evidence of RSV infection by age 3 years [18]. The initial RSV infection is typically the most severe, causing lower respiratory tract disease, such as bronchiolitis, in 20% to 30% of infants [11], [18], [19]. Other viruses such as rhinovirus, PIV, and adenovirus circulate nearly year round with seasonal peaks of illness [10], [11], [12]

Doc-link limit:1818

Circle – Paragraph Level/Square – Article Level

Public Health Neighborhood

Children/Asthma/Treatment Cluster

Treatment Neighborhood

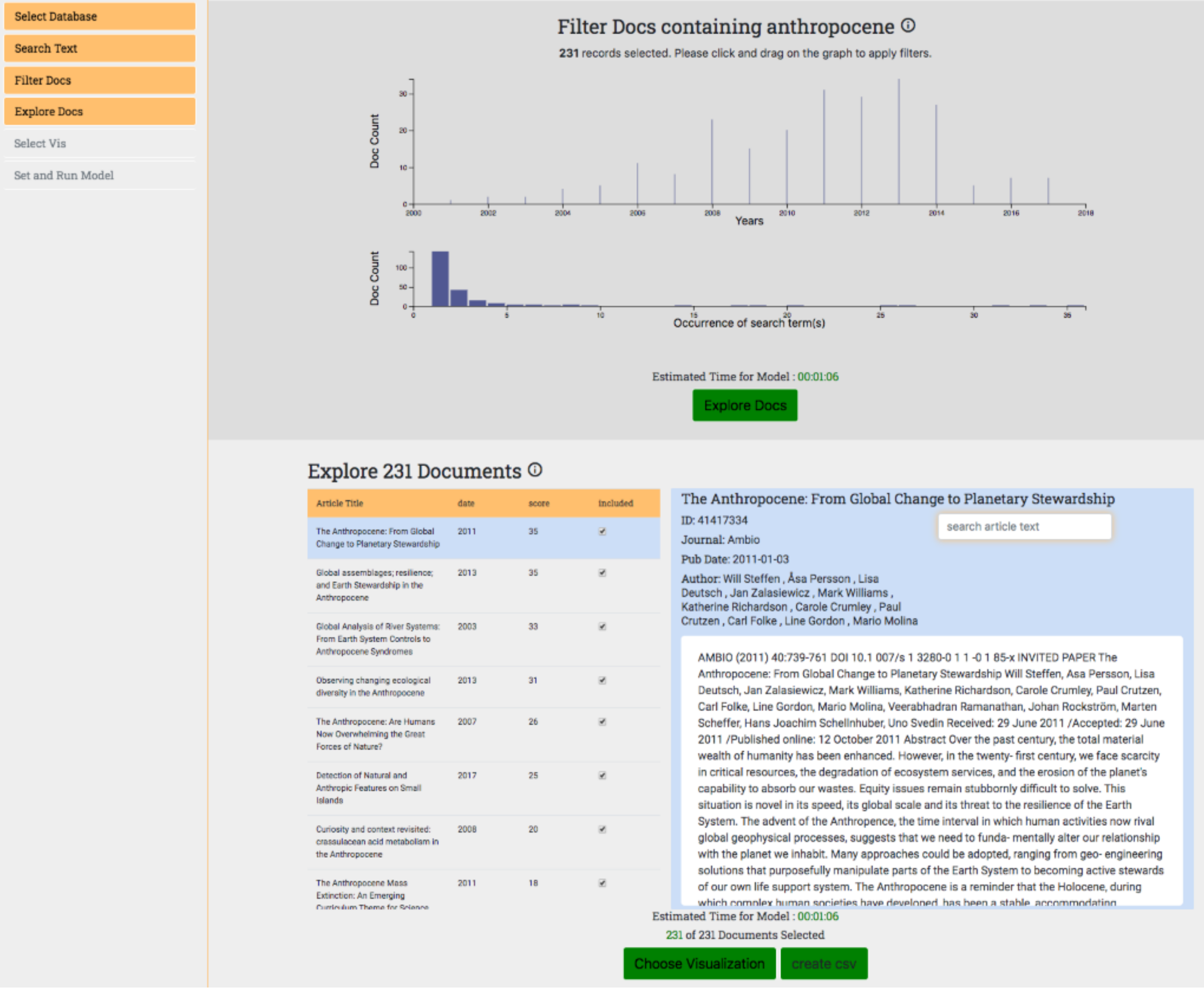
Bench Science Neighborhood

Clusters ⓘ

cluster	#para, #docs	# topics	terms
12	0,7872	10	children patients asthma rsv age
2	0,7190	19	patients patient cases days years
3	0,7100	8	information countries people health research
20	0,4774	13	binding proteins protein peptides viruses
17	0,4586	10	expression production cells activation increased
10	0,3609	7	detection sensitivity samples detect positive
7	0,3257	8	infected model individuals transmission parameters
29	0,3176	7	cells expression infected incubated infection
23	0,2567	8	participants studies respondents information people
6	0,2566	8	samples positive detected tested patients
11	0,2453	7	human humans species viruses virus
16	0,2350	5	covid-19 patients

Model of Models: User Interface

Adaptable visualization outputs based on a single underlying model.



Filter Docs containing anthropocene ⓘ

231 records selected. Please click and drag on the graph to apply filters.

Estimated Time for Model : 00:01:06

Explore 231 Documents ⓘ

Article Title	date	score	included
The Anthropocene: From Global Change to Planetary Stewardship	2011	35	☑
Global assemblages; resilience; and Earth Stewardship in the Anthropocene	2013	35	☑
Global Analysis of River Systems: From Earth System Controls to Anthropocene Syndromes	2003	33	☑
Observing changing ecological diversity in the Anthropocene	2013	31	☑
The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?	2007	26	☑
Detection of Natural and Anthropic Features on Small Islands	2017	25	☑
Curiosity and context revisited: crassulacean acid metabolism in the Anthropocene	2008	20	☑
The Anthropocene Mass Extinction: An Emerging Curriculum Theme for Science	2011	18	☑

The Anthropocene: From Global Change to Planetary Stewardship

ID: 41417334

Journal: Ambio

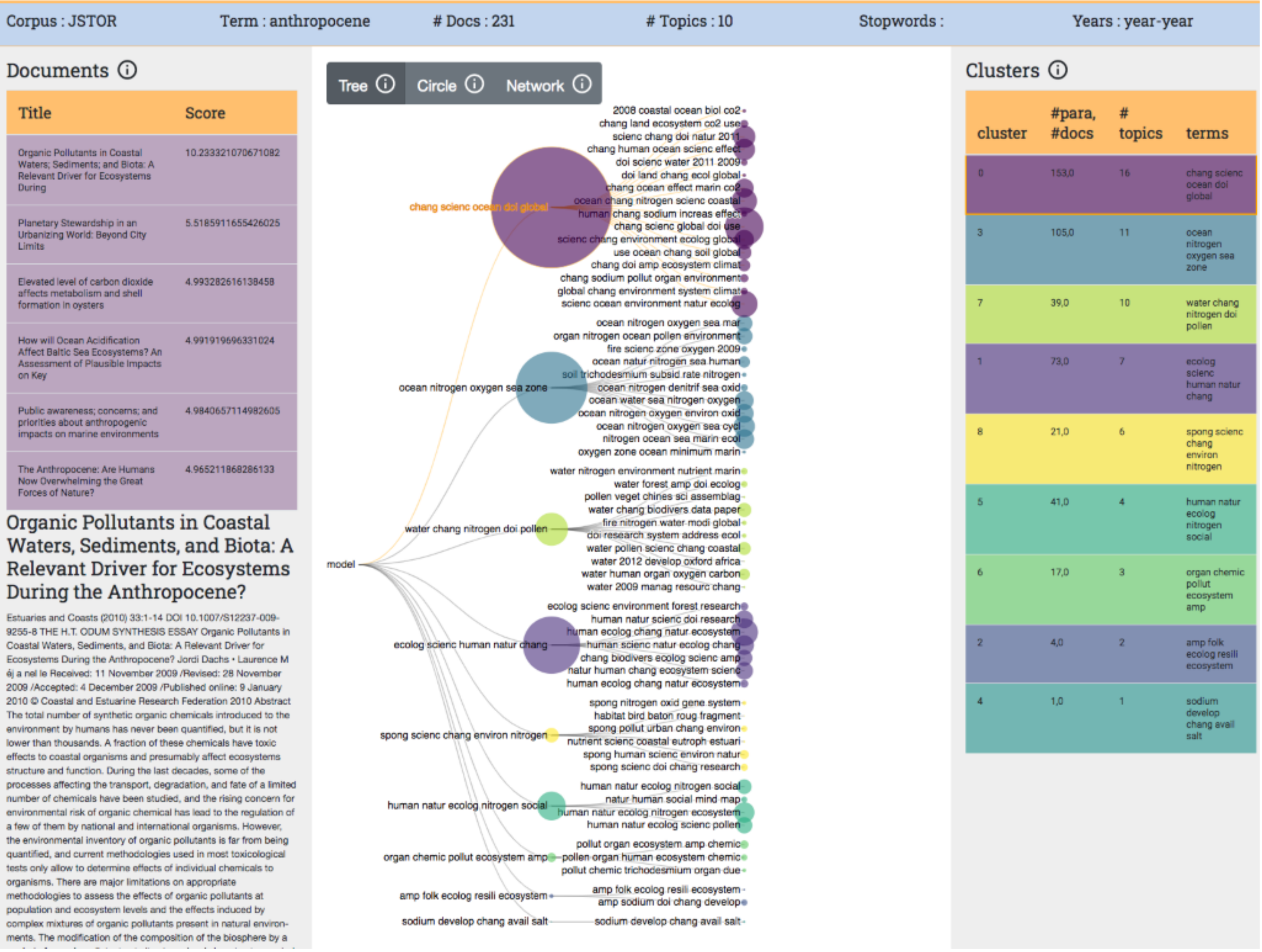
Pub Date: 2011-01-03

Author: Will Steffen , Åsa Persson , Lisa Deutsch , Jan Zalasiewicz , Mark Williams , Katherine Richardson , Carole Crumley , Paul Crutzen , Carl Folke , Line Gordon , Mario Molina

AMBIO (2011) 40:739-761 DOI 10.1 007/s 1 3280-0 1 1 -0 1 85-x INVITED PAPER The Anthropocene: From Global Change to Planetary Stewardship Will Steffen, Asa Persson, Lisa Deutsch, Jan Zalasiewicz, Mark Williams, Katherine Richardson, Carole Crumley, Paul Crutzen, Carl Folke, Line Gordon, Mario Molina, Veerabhadran Ramanathan, Johan Rockström, Marten Scheffer, Hans Joachim Schellnhuber, Uno Svedin Received: 29 June 2011 /Accepted: 29 June 2011 /Published online: 12 October 2011 Abstract Over the past century, the total material wealth of humanity has been enhanced. However, in the twenty- first century, we face scarcity in critical resources, the degradation of ecosystem services, and the erosion of the planet's capability to absorb our wastes. Equity issues remain stubbornly difficult to solve. This situation is novel in its speed, its global scale and its threat to the resilience of the Earth System. The advent of the Anthropence, the time interval in which human activities now rival global geophysical processes, suggests that we need to funda- mentally alter our relationship with the planet we inhabit. Many approaches could be adopted, ranging from geo- engineering solutions that purposefully manipulate parts of the Earth System to becoming active stewards of our own life support system. The Anthropocene is a reminder that the Holocene, during which complex human societies have developed, has been a stable, accommodating

Estimated Time for Model : 00:01:06

231 of 231 Documents Selected



Tree ⓘ
Circle ⓘ
Network ⓘ
model
chang scienc ocean doi global
2008 coastal ocean biol co2
chang land ecosystem co2 use
scienc chang doi natur 2011
chang human ocean scienc effect
doi scienc water 2011 2009
doi land chang ecol global
chang ocean effect marin co2
ocean chang nitrogen scienc coastal
human chang sodium increas effect
chang scienc global doi use
scienc chang environment ecolog global
use ocean chang soil global
chang doi amp ecosystem climat
chang sodium pollut organ environment
global chang environment system climat
scienc ocean environment natur ecolog
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organ nitrogen ocean pollen environment
fire scienc zone oxygen 2009
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habitat bird baton roug fragment
spong pollut urban chang environ
nutrient scienc coastal eutroph estuari
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spong scienc doi chang research
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human natur ecolog nitrogen social
natur human social mind map
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pollut organ ecosystem amp chemic
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Corpus : JSTOR | Term : anthropocene | # Docs : 231 | # Topics : 10 | Stopwords : | Years : year-year

Documents ⓘ

Title	Score
Organic Pollutants in Coastal Waters; Sediments; and Biota: A Relevant Driver for Ecosystems During	10.233321070671082
Planetary Stewardship in an Urbanizing World: Beyond City Limits	5.5185911655426025
Elevated level of carbon dioxide affects metabolism and shell formation in oysters	4.993282616138458
How will Ocean Acidification Affect Baltic Sea Ecosystems? An Assessment of Plausible Impacts on Key	4.991919696331024
Public awareness; concerns; and priorities about anthropogenic impacts on marine environments	4.9840657114982605
The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?	4.965211868286133

Organic Pollutants in Coastal Waters, Sediments, and Biota: A Relevant Driver for Ecosystems During the Anthropocene?

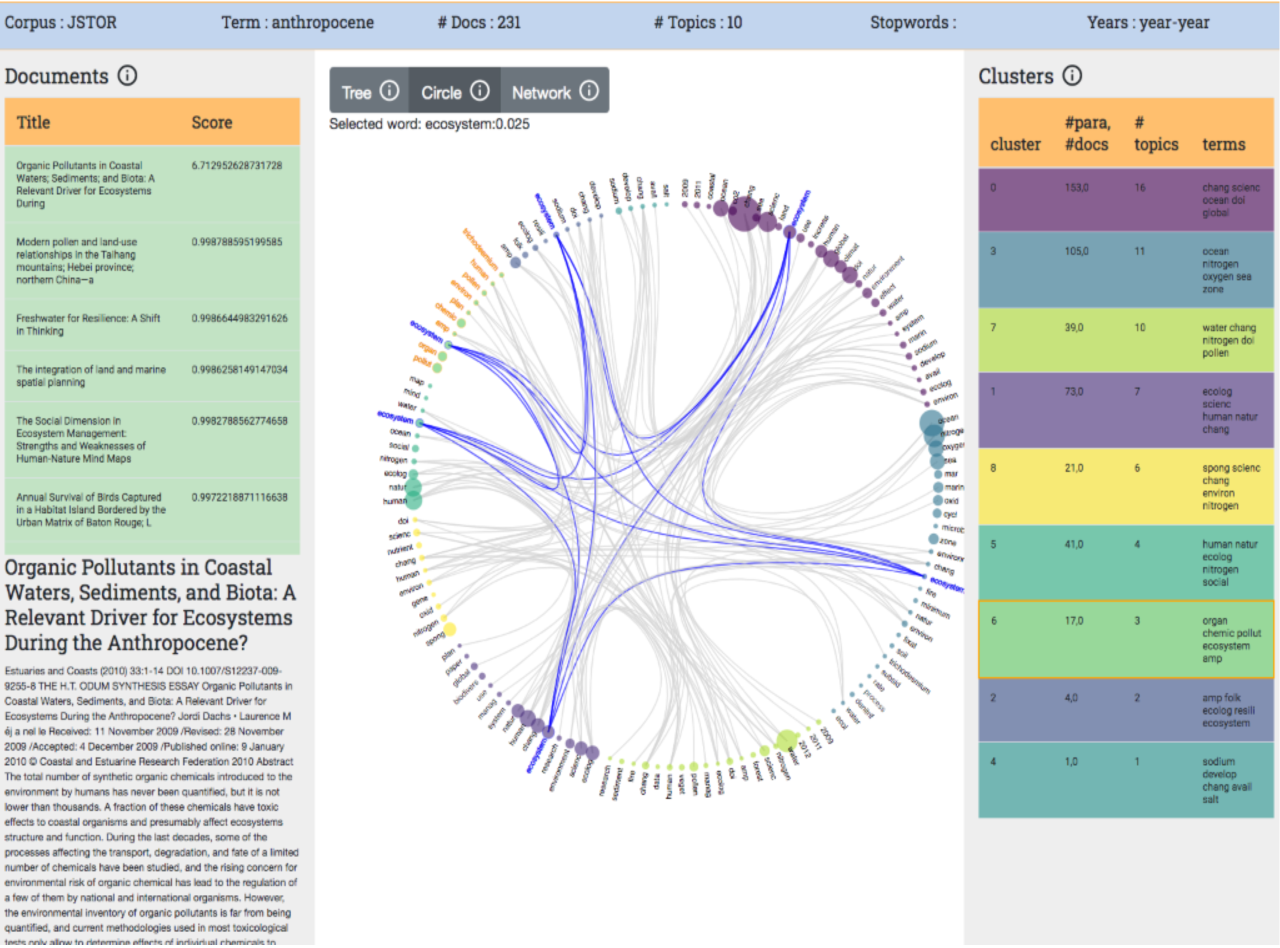
Estuaries and Coasts (2010) 33:1-14 DOI 10.1007/S12237-009-9255-8 THE H.T. ODUM SYNTHESIS ESSAY Organic Pollutants in Coastal Waters, Sediments, and Biota: A Relevant Driver for Ecosystems During the Anthropocene? Jordi Dachs • Laurence M éj a nel le Received: 11 November 2009 /Revised: 28 November 2009 /Accepted: 4 December 2009 /Published online: 9 January 2010 © Coastal and Estuarine Research Federation 2010 Abstract The total number of synthetic organic chemicals introduced to the environment by humans has never been quantified, but it is not lower than thousands. A fraction of these chemicals have toxic effects to coastal organisms and presumably affect ecosystems structure and function. During the last decades, some of the processes affecting the transport, degradation, and fate of a limited number of chemicals have been studied, and the rising concern for environmental risk of organic chemical has lead to the regulation of a few of them by national and international organisms. However, the environmental inventory of organic pollutants is far from being quantified, and current methodologies used in most toxicological tests only allow to determine effects of individual chemicals to organisms. There are major limitations on appropriate methodologies to assess the effects of organic pollutants at population and ecosystem levels and the effects induced by complex mixtures of organic pollutants present in natural environments. The modification of the composition of the biosphere by a

Clusters ⓘ

cluster	#para, #docs	# topics	terms
0	153,0	16	chang scienc ocean doi global
3	105,0	11	ocean nitrogen oxygen sea zone
7	39,0	10	water chang nitrogen doi pollen
1	73,0	7	ecolog scienc human natur chang
8	21,0	6	spong scienc chang environ nitrogen
5	41,0	4	human natur ecolog nitrogen social
6	17,0	3	organ chemic pollut ecosystem amp
2	4,0	2	amp folk ecolog resili ecosystem
4	1,0	1	sodium develop chang avail salt

Model of Models: User Interface

Adaptable visualization outputs based on a single underlying model.



Corpus : JSTOR   Term : anthropocene   # Docs : 231   # Topics : 10   Stopwords :   Years : year-year

Documents ⓘ

Title	Score
Organic Pollutants in Coastal Waters; Sediments; and Biota: A Relevant Driver for Ecosystems During	6.712952628731728
Modern pollen and land-use relationships in the Taihang mountains; Hebei province; northern China—a	0.998788595199585
Freshwater for Resilience: A Shift in Thinking	0.9986644983291626
The integration of land and marine spatial planning	0.9986258149147034
The Social Dimension in Ecosystem Management: Strengths and Weaknesses of Human-Nature Mind Maps	0.9982788562774658
Annual Survival of Birds Captured in a Habitat Island Bordered by the Urban Matrix of Baton Rouge; L	0.9972218871116638

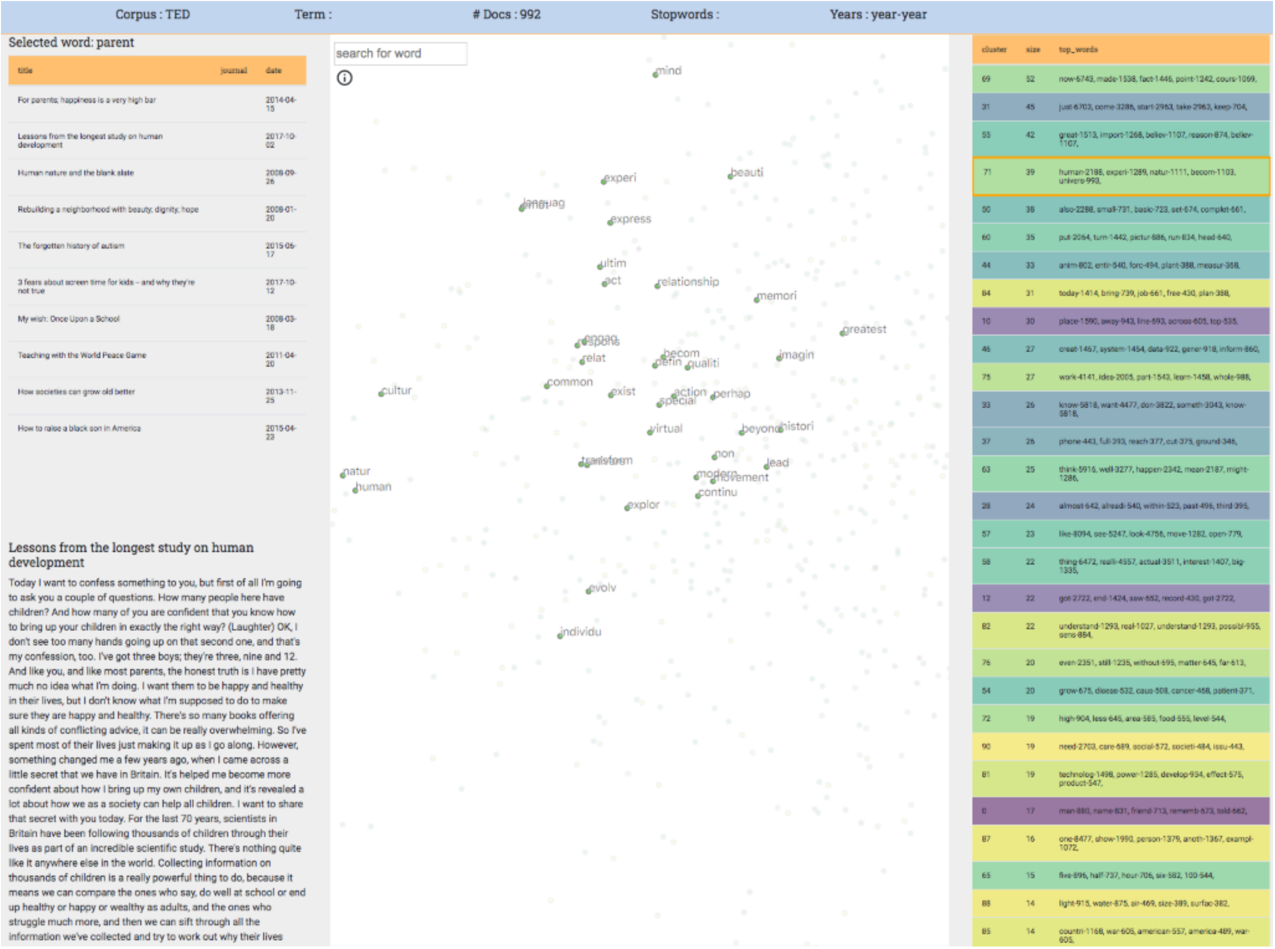
Organic Pollutants in Coastal Waters, Sediments, and Biota: A Relevant Driver for Ecosystems During the Anthropocene?

Estuaries and Coasts (2010) 33:1-14 DOI 10.1007/S12237-009-9255-8 THE H.T. ODUM SYNTHESIS ESSAY Organic Pollutants in Coastal Waters, Sediments, and Biota: A Relevant Driver for Ecosystems During the Anthropocene? Jordi Dachs • Laurence M éj a nel le Received: 11 November 2009 /Revised: 28 November 2009 /Accepted: 4 December 2009 /Published online: 9 January 2010 © Coastal and Estuarine Research Federation 2010 Abstract The total number of synthetic organic chemicals introduced to the environment by humans has never been quantified, but it is not lower than thousands. A fraction of these chemicals have toxic effects to coastal organisms and presumably affect ecosystems structure and function. During the last decades, some of the processes affecting the transport, degradation, and fate of a limited number of chemicals have been studied, and the rising concern for environmental risk of organic chemical has lead to the regulation of a few of them by national and international organisms. However, the environmental inventory of organic pollutants is far from being quantified, and current methodologies used in most toxicological tests only allow to determine effects of individual chemicals to

Selected word: ecosystem:0.025

Clusters ⓘ

cluster	#para, #docs	# topics	terms
0	153,0	16	chang scienc ocean doi global
3	105,0	11	ocean nitrogen oxygen sea zone
7	39,0	10	water chang nitrogen doi pollen
1	73,0	7	ecolog scienc human natur chang
8	21,0	6	spong scienc chang environ nitrogen
5	41,0	4	human natur ecolog nitrogen social
6	17,0	3	organ chemic pollut ecosystem amp
2	4,0	2	amp folk ecolog resili ecosystem
4	1,0	1	sodium develop chang avail salt



Corpus : TED   Term :   # Docs : 992   Stopwords :   Years : year-year

Selected word: parent

title	journal	date
For parents; happiness is a very high bar		2014-04-15
Lessons from the longest study on human development		2017-10-02
Human nature and the blank slate		2008-09-26
Rebuilding a neighborhood with beauty; dignity; hope		2008-01-20
The forgotten history of autism		2015-06-17
3 fears about screen time for kids – and why they're not true		2017-10-12
My wish: Once Upon a School		2008-03-18
Teaching with the World Peace Game		2011-04-20
How societies can grow old better		2013-11-25
How to raise a black son in America		2015-04-23

Lessons from the longest study on human development

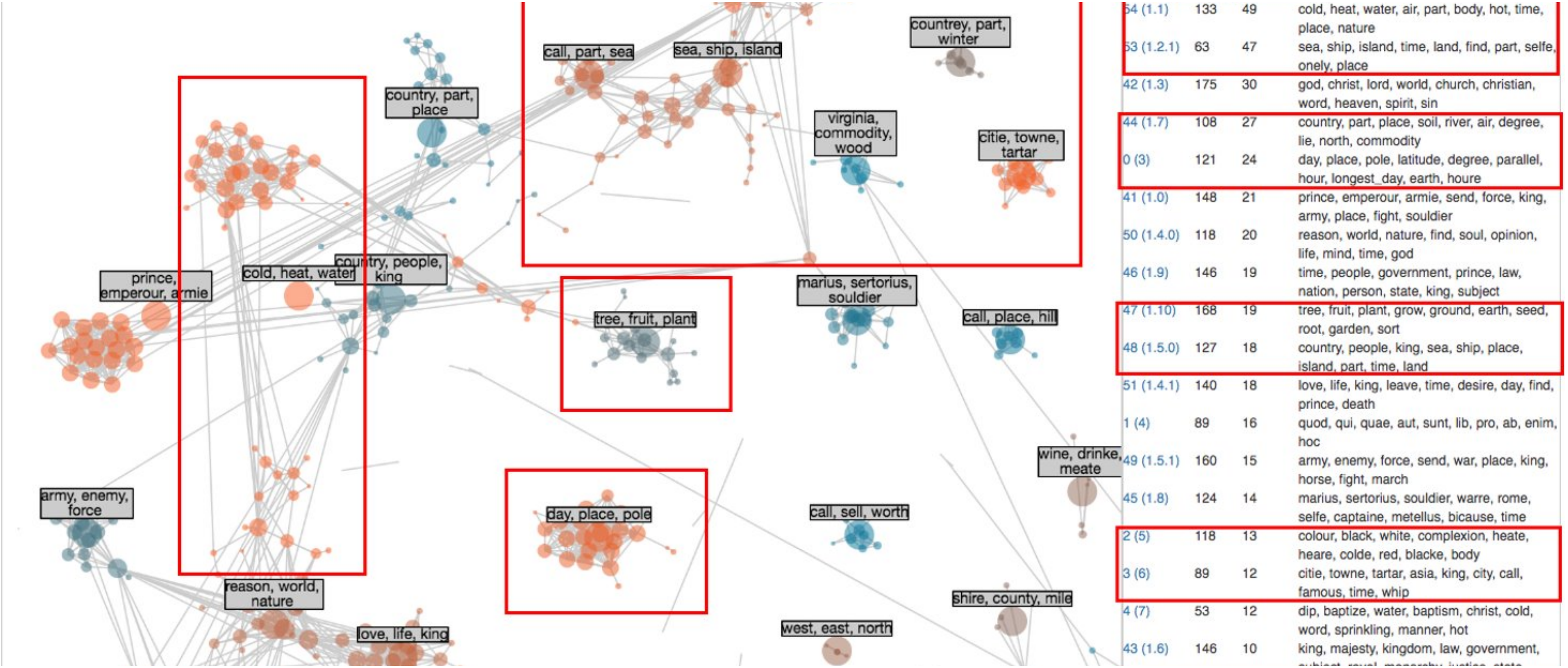
Today I want to confess something to you, but first of all I'm going to ask you a couple of questions. How many people here have children? And how many of you are confident that you know how to bring up your children in exactly the right way? (Laughter) OK, I don't see too many hands going up on that second one, and that's my confession, too. I've got three boys; they're three, nine and 12. And like you, and like most parents, the honest truth is I have pretty much no idea what I'm doing. I want them to be happy and healthy in their lives, but I don't know what I'm supposed to do to make sure they are happy and healthy. There's so many books offering all kinds of conflicting advice, it can be really overwhelming. So I've spent most of their lives just making it up as I go along. However, something changed me a few years ago, when I came across a little secret that we have in Britain. It's helped me become more confident about how I bring up my own children, and it's revealed a lot about how we as a society can help all children. I want to share that secret with you today. For the last 70 years, scientists in Britain have been following thousands of children through their lives as part of an incredible scientific study. There's nothing quite like it anywhere else in the world. Collecting information on thousands of children is a really powerful thing to do, because it means we can compare the ones who say, do well at school or end up healthy or happy or wealthy as adults, and the ones who struggle much more, and then we can sift through all the information we've collected and try to work out why their lives

search for word

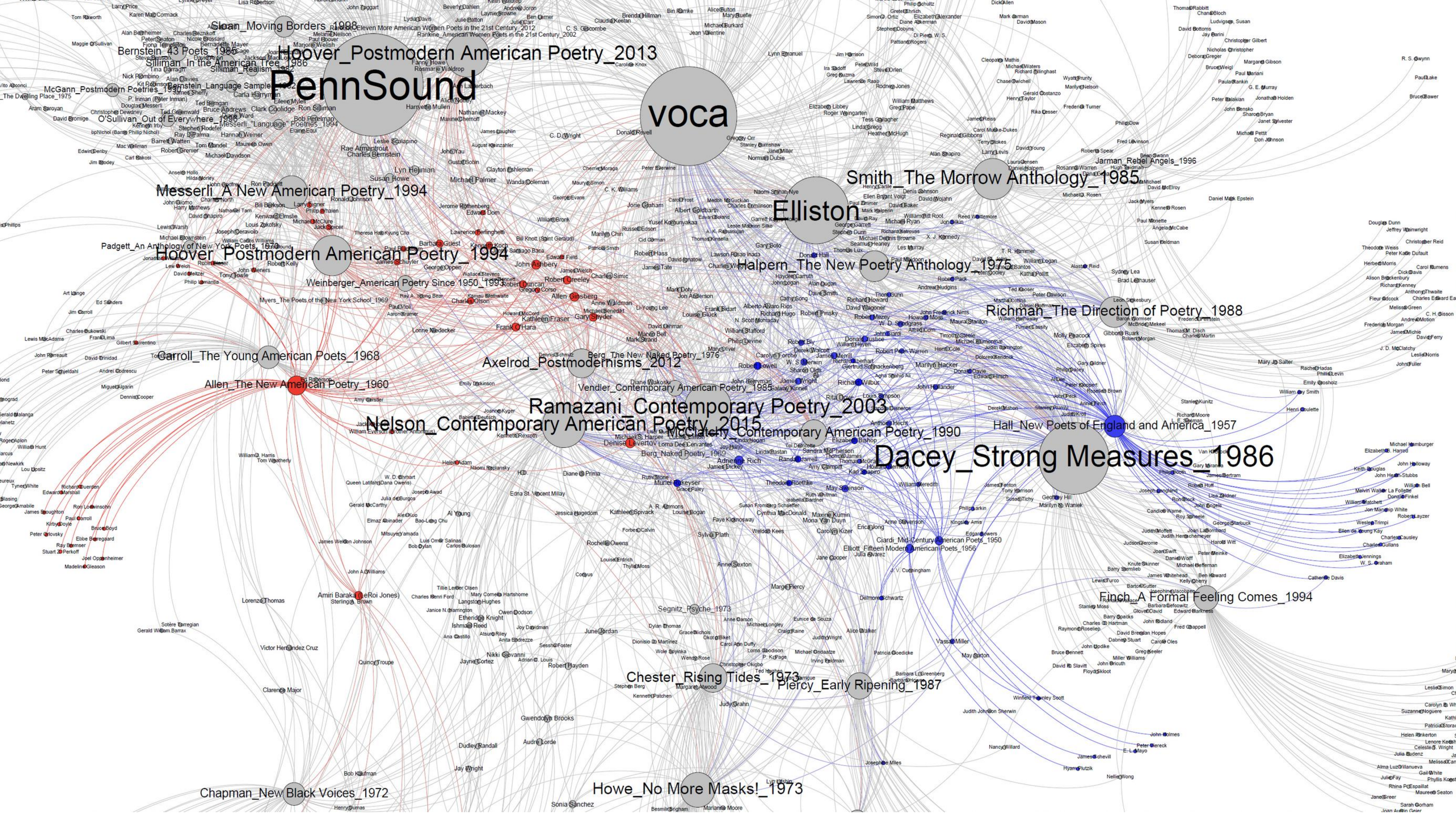
ⓘ

cluster	size	top_words
69	52	now-6743, made-1538, fact-1446, point-1242, cours-1069,
31	45	just-6703, come-3286, start-2963, take-2963, keep-704,
55	42	great-1513, import-1268, believ-1107, reason-874, believ-1107,
71	39	human-2188, experi-1289, natur-1111, becom-1103, univers-993,
50	38	also-2288, small-731, basic-723, set-674, complet-661,
60	35	put-2064, turn-1442, pictur-886, run-834, head-640,
44	33	anim-802, entir-540, forc-494, plant-388, measur-388,
84	31	today-1414, bring-739, job-661, free-430, plan-388,
10	30	place-1590, away-943, line-693, across-605, top-535,
46	27	creat-1467, system-1454, data-922, gener-918, inform-860,
75	27	work-4141, idea-2005, part-1543, learn-1458, whole-988,
33	26	know-5818, want-4477, don-3822, someth-3043, know-5818,
37	26	phone-443, full-393, reach-377, cut-375, ground-346,
63	25	think-5916, well-3277, happen-2342, mean-2187, might-1286,
28	24	almost-642, alreadi-540, within-523, past-496, third-395,
57	23	like-8094, see-5247, look-4756, move-1282, open-779,
58	22	thing-6472, realli-4557, actual-3511, interest-1407, big-1335,
12	22	got-2722, end-1424, saw-652, record-430, got-2722,
82	22	understand-1293, real-1027, understand-1293, possibl-965, sens-884,
76	20	even-2351, still-1235, without-695, matter-645, far-613,
54	20	grow-675, disease-532, caus-508, cancer-468, patient-371,
72	19	high-904, less-645, area-585, food-555, level-544,
90	19	need-2703, care-689, social-572, societi-484, issu-443,
81	19	technolog-1498, power-1285, develop-934, effect-575, product-547,
0	17	man-880, name-831, friend-713, rememb-673, told-662,
87	16	one-8477, show-1990, person-1379, anoth-1367, exampl-1072,
65	15	five-896, half-737, hour-706, six-582, 100-544,
88	14	light-915, water-875, air-469, size-389, surfac-382,
85	14	countri-1168, war-606, american-557, america-489, war-605,

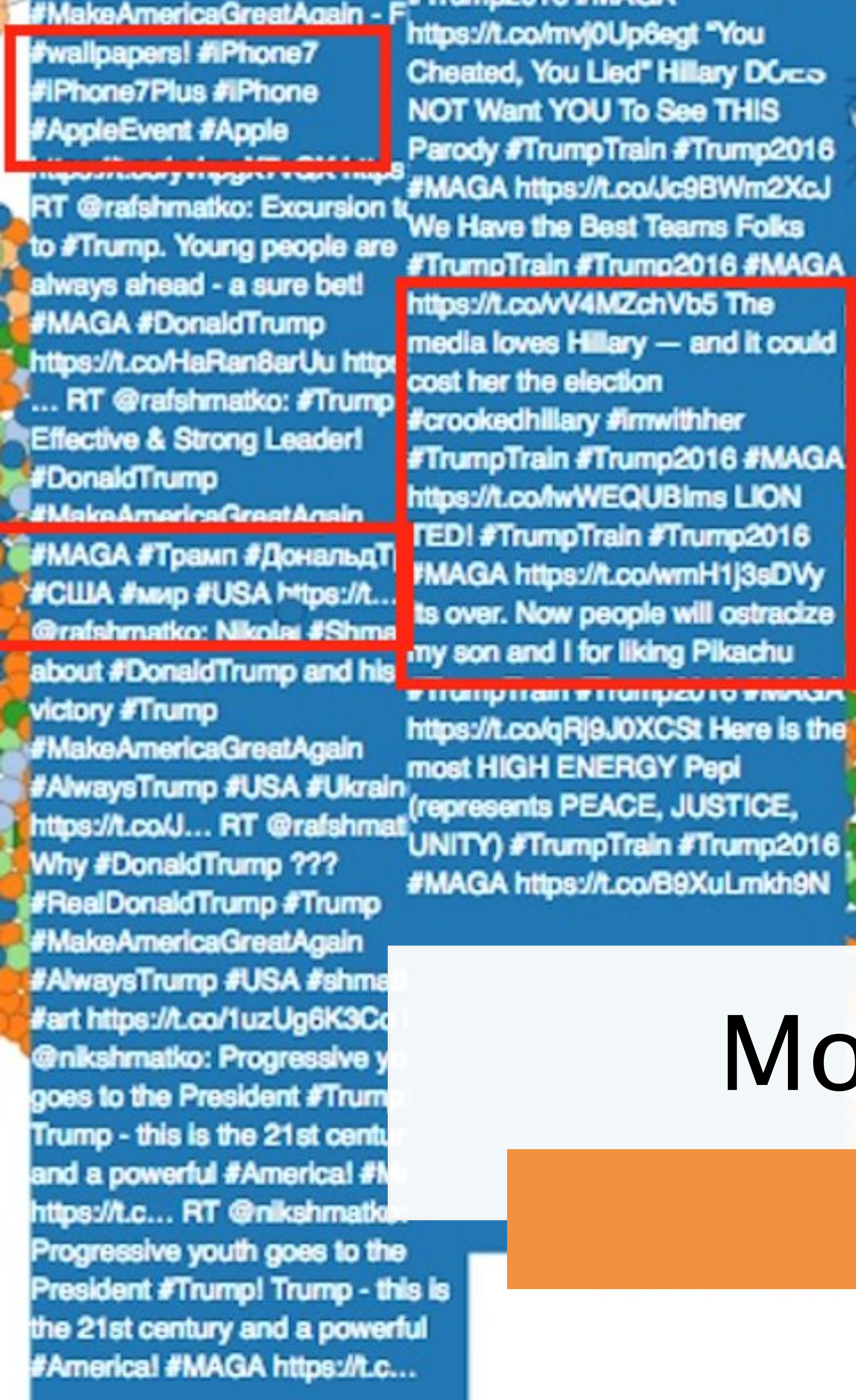
MoM: Digital Humanities



54 (1.1)	133	49	cold, heat, water, air, part, body, hot, time, place, nature
53 (1.2.1)	63	47	sea, ship, island, time, land, find, part, selfe, onely, place
42 (1.3)	175	30	god, christ, lord, world, church, christian, word, heaven, spirit, sin
44 (1.7)	108	27	country, part, place, soil, river, air, degree, lie, north, commodity
0 (3)	121	24	day, place, pole, latitude, degree, parallel, hour, longest_day, earth, houre
41 (1.0)	148	21	prince, emperour, armie, send, force, king, army, place, fight, souldier
50 (1.4.0)	118	20	reason, world, nature, find, soul, opinion, life, mind, time, god
46 (1.9)	146	19	time, people, government, prince, law, nation, person, state, king, subject
47 (1.10)	168	19	tree, fruit, plant, grow, ground, earth, seed, root, garden, sort
48 (1.5.0)	127	18	country, people, king, sea, ship, place, island, part, time, land
51 (1.4.1)	140	18	love, life, king, leave, time, desire, day, find, prince, death
1 (4)	89	16	quod, qui, quae, aut, sunt, lib, pro, ab, enim, hoc
49 (1.5.1)	160	15	army, enemy, force, send, war, place, king, horse, fight, march
45 (1.8)	124	14	marius, sertorius, souldier, warre, rome, selfe, captaine, metellus, bicause, time
2 (5)	118	13	colour, black, white, complexion, heate, heare, colde, red, blacke, body
3 (6)	89	12	citie, towne, tartar, asia, king, city, call, famous, time, whip
4 (7)	53	12	dip, baptize, water, baptism, christ, cold, word, sprinkling, manner, hot
43 (1.6)	146	10	king, majesty, kingdom, law, government, subject, royal, monarchy, justice, state


PennSound
voca
Elliston
Hoover_Postmodern American Poetry_2013
Sloan_Moving Borders_1998
Rankine_Eleven More American Women Poets in the 21st Century_2012
Rankine_American Women Poets in the 21st Century_2002
Bernstein_43 Poets_1986
Silliman_In the American Tree_1986
Silliman_Realism_1982
McGann_Postmodern Poetries_1990
The Dwelling Place_1975
Bernstein_Language Sample
O'Sullivan_Out of Everywhere_1996
Messerli_"Language" Poetries_1994
Messerli_A New American Poetry_1994
Padgett_An Anthology of New York Poets_1970
Hoover_Postmodern American Poetry_1994
Weinberger_American Poetry Since 1950_1993
Myers_The Poets of the New York School_1969
Carroll_The Young American Poets_1968
Allen_The New American Poetry_1960
Axelrod_Postmodernisms_2012
Berg_The New Naked Poetry_1976
Vendler_Contemporary American Poetry_1985
Ramazani_Contemporary Poetry_2003
Nelson_Contemporary American Poetry_2015
McClatchy_Contemporary American Poetry_1990
Berg_Naked Poetry_1969
Smith_The Morrow Anthology_1985
Jarman_Rebel Angels_1996
Halpern_The New Poetry Anthology_1975
Richman_The Direction of Poetry_1988
Hall_New Poets of England and America_1957
Dacey_Strong Measures_1986
Ciardi_Mid-Century American Poets_1950
Elliott_Fifteen Modern American Poets_1956
Finch_A Formal Feeling Comes_1994
Segnitz_Psyche_1973
Chester_Rising Tides_1973
Piercy_Early Ripening_1987
Chapman_New Black Voices_1972
Howe_No More Masks!_1973

MoM: Social Sciences



#MakeAmericaGreatAgain - F
#wallpapers! #iPhone7
#iPhone7Plus #iPhone
#AppleEvent #Apple
RT @rafshmatko: Excursion to
to #Trump. Young people are
always ahead - a sure bet!
#MAGA #DonaldTrump
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... RT @rafshmatko: #Trump
Effective & Strong Leader!
#DonaldTrump
#MakeAmericaGreatAgain
#MAGA #Трамп #ДональдТ
#США #мир #USA https://t...
@rafshmatko: Nikolai #Shma
about #DonaldTrump and his
victory #Trump
#MakeAmericaGreatAgain
#AlwaysTrump #USA #Ukrain
https://t.co/J... RT @rafshmat
Why #DonaldTrump ???
#RealDonaldTrump #Trump
#MakeAmericaGreatAgain
#AlwaysTrump #USA #shma
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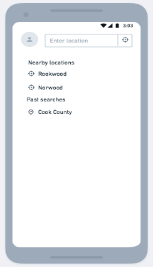
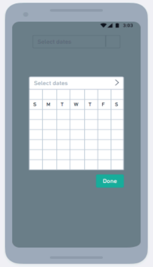
@nikshmatko: Progressive y
goes to the President #Trum
Trump - this is the 21st centu
and a powerful #America! #M
https://t.c... RT @nikshmatko
Progressive youth goes to the
President #Trump! Trump - this is
the 21st century and a powerful
#America! #MAGA https://t.c...

#Trump2016 #MAGA
https://t.co/mvj0Up6egt "You
Cheated, You Lied" Hillary DOES
NOT Want YOU To See THIS
Parody #TrumpTrain #Trump2016
#MAGA https://t.co/Jc9BWm2XcJ
We Have the Best Teams Folks
#TrumpTrain #Trump2016 #MAGA
https://t.co/vV4MZchVb5 The
media loves Hillary — and it could
cost her the election
#crookedhillary #imwithher
#TrumpTrain #Trump2016 #MAGA
https://t.co/wWEQUBlms LION
TED! #TrumpTrain #Trump2016
#MAGA https://t.co/wmH1j3sDVy
Its over. Now people will ostracize
my son and I for liking Pikachu
#TrumpTrain #Trump2016 #MAGA
https://t.co/qRj9J0XCSt Here is the
most HIGH ENERGY Pepl
(represents PEACE, JUSTICE,
UNITY) #TrumpTrain #Trump2016
#MAGA https://t.co/B9XuLmkh9N

Android

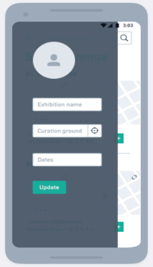


Android

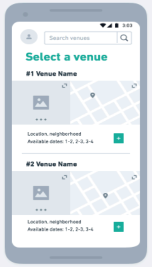


OR

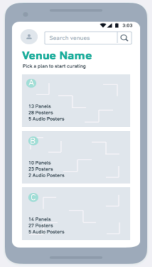
Android



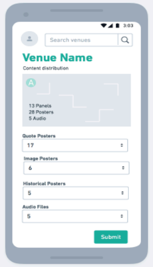
Android



Android



Android



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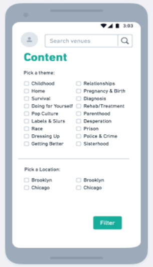

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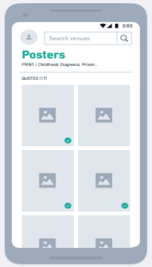
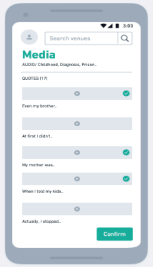
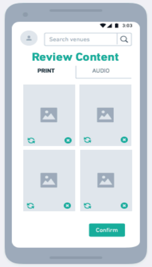


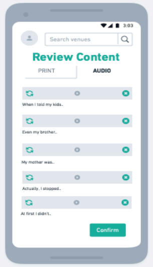
Android



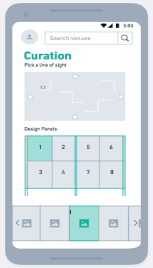
Android



Android



Frame

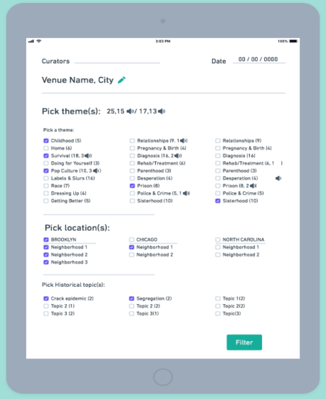


FOR JONATHAN

FOR JONATHAN

FOR JONATHAN

Filter



Curators

Date 00 / 00 / 0000

Venue Name, City

Pick theme(s): 25,15 🔊/ 17,13 🔊

Pick a theme:

☑ Childhood (5)
□ Home (6)
☑ Survival (18, 3 🔊)
□ Doing for Yourself (3)
☑ Pop Culture (10, 3 🔊)
□ Labels & Slurs (16)
□ Race (7)
□ Dressing Up (4)
□ Getting Better (5)

□ Relationships (9, 1 🔊)
□ Pregnancy & Birth (4)
□ Diagnosis (16, 2 🔊)
□ Rehab/Treatment (6)
□ Parenthood (3)
□ Desperation (4)
☑ Prison (8)
□ Police & Crime (5, 1 🔊)
□ Sisterhood (10)

□ Relationships (9)
□ Pregnancy & Birth (4)
□ Diagnosis (16)
□ Rehab/Treatment (6, 1)
□ Parenthood (3)
□ Desperation (4) 🔊
□ Prison (8, 2 🔊
□ Police & Crime (5)
☑ Sisterhood (10)

Pick location(s):

☑ BROOKLYN
☑ Neighborhood 1
☑ Neighborhood 2
☑ Neighborhood 3

□ CHICAGO
☑ Neighborhood 1
□ Neighborhood 2

□ NORTH CAROLINA
□ Neighborhood 1
□ Neighborhood 2

Pick Historical topic(s):

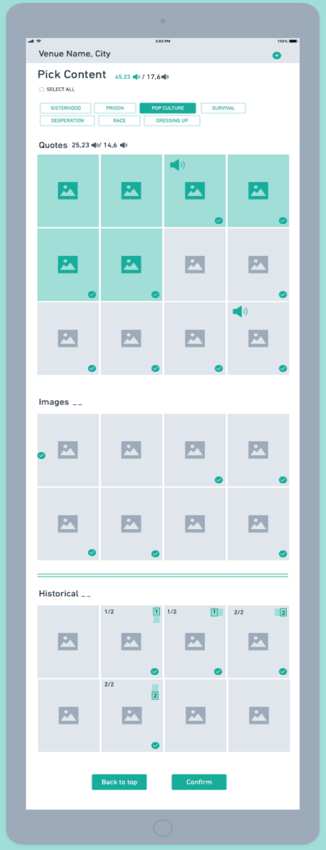
☑ Crack epidemic (2)
□ Topic 2 (1)
□ Topic 3 (2)

☑ Segregation (2)
□ Topic 2 (2)
□ Topic 3(1)

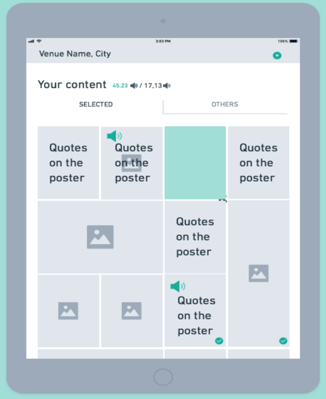
□ Topic 1(2)
□ Topic 2(2)
□ Topic(3)

Filter

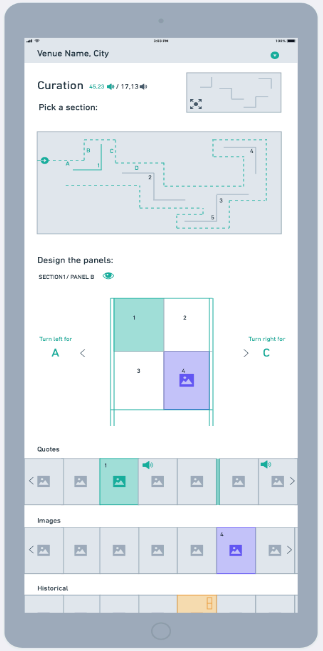
Select



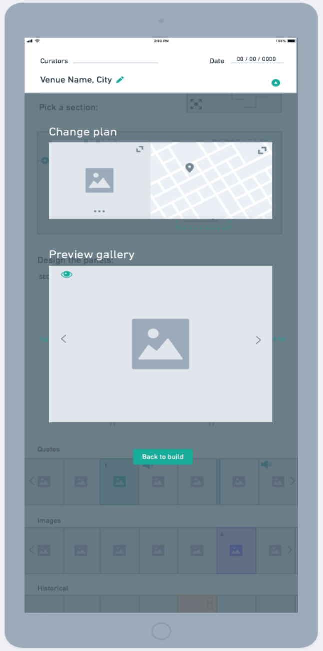
Review



Curate

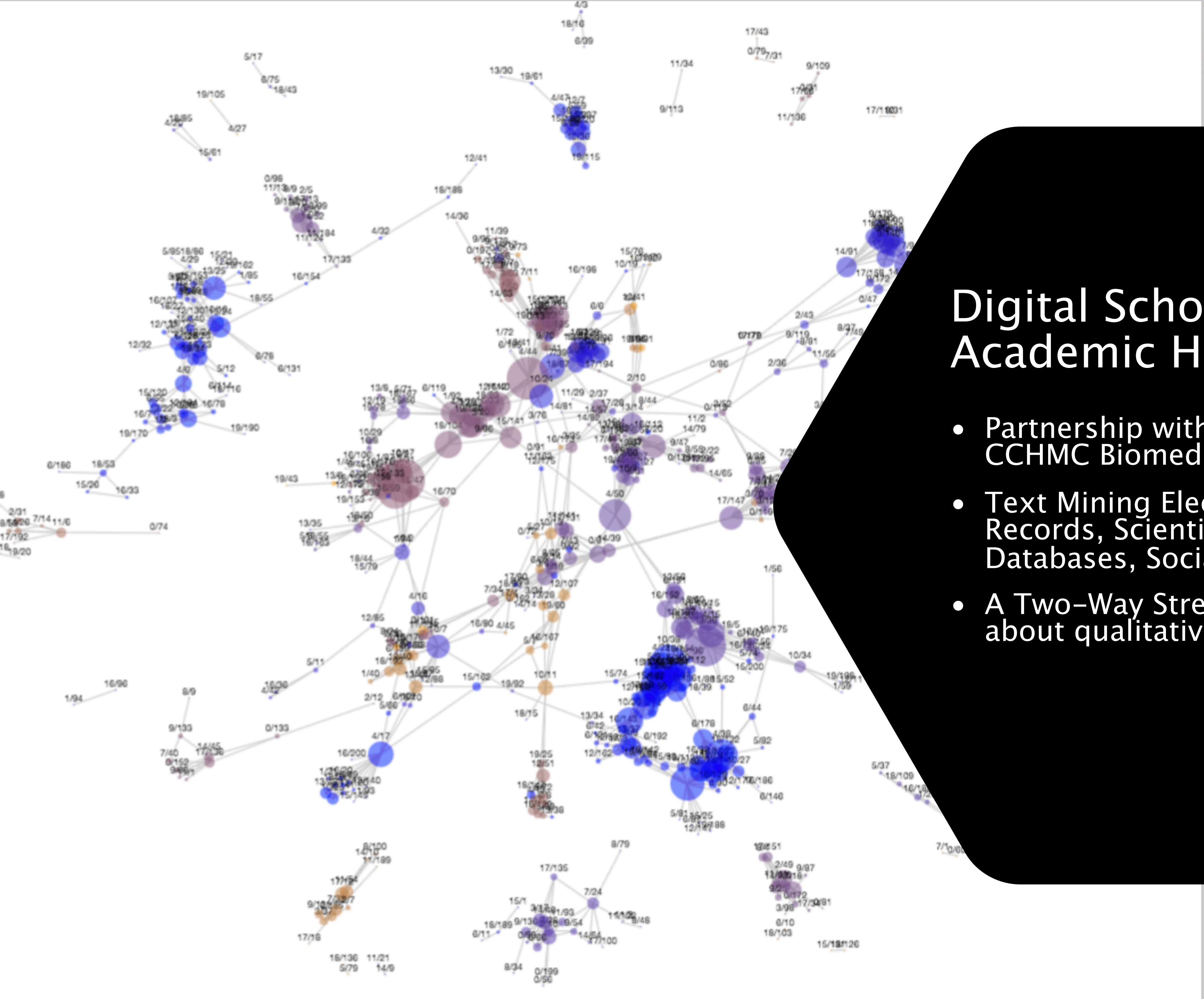


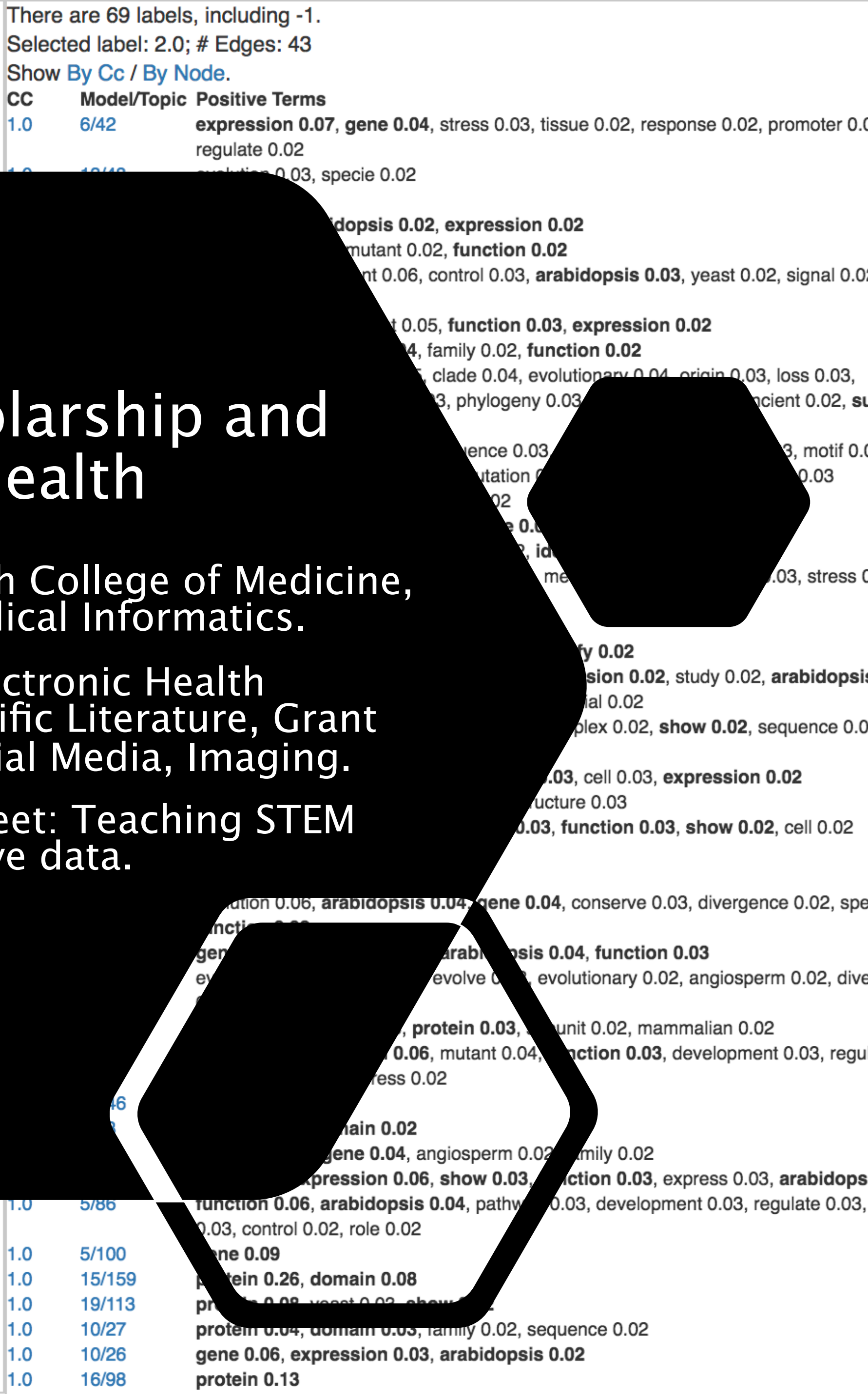
Preview



Digital Scholarship and Academic Health

- Partnership with College of Medicine, CCHMC Biomedical Informatics.
- Text Mining Electronic Health Records, Scientific Literature, Grant Databases, Social Media, Imaging.
- A Two-Way Street: Teaching STEM about qualitative data.





There are 69 labels, including -1.
Selected label: 2.0; # Edges: 43
Show By Cc / By Node.

CC	Model/Topic	Positive Terms
1.0	6/42	**expression 0.07**, **gene 0.04**, stress 0.03, tissue 0.02, response 0.02, promoter 0.0 regulate 0.02
		evolution 0.03, specie 0.02
		idopsis 0.02, **expression 0.02**
		mutant 0.02, **function 0.02**
		nt 0.06, control 0.03, **arabidopsis 0.03**, yeast 0.02, signal 0.02
		t 0.05, **function 0.03**, **expression 0.02**
		4, family 0.02, **function 0.02**
		, clade 0.04, evolutionary 0.04, origin 0.03, loss 0.03, 3, phylogeny 0.03 ncient 0.02, su
		uence 0.03 3, motif 0.0 utation 0.03 02
		e 0. , id me .03, stress 0
		fy 0.02
		sion 0.02, study 0.02, **arabidopsis** ial 0.02
		plex 0.02, **show 0.02**, sequence 0.0
		.03, cell 0.03, **expression 0.02** ructure 0.03
		0.03, **function 0.03**, **show 0.02**, cell 0.02
		ution 0.06, **arabidopsis 0.04**, **gene 0.04**, conserve 0.03, divergence 0.02, spe ncti
		gen arabi psis 0.04, **function 0.03** ev evolve 0 , evolutionary 0.02, angiosperm 0.02, dive
		, **protein 0.03**, unit 0.02, mammalian 0.02
		0.06, mutant 0.04, nction 0.03, development 0.03, regu ress 0.02
	46	
		ain 0.02
		gene 0.04, angiosperm 0.02 mily 0.02
		xpression 0.06, **show 0.03**, ction 0.03, express 0.03, **arabidops**
1.0	5/86	**function 0.06**, **arabidopsis 0.04**, pathw 0.03, development 0.03, regulate 0.03, 0.03, control 0.02, role 0.02
1.0	5/100	ne 0.09
1.0	15/159	p tein 0.26, **domain 0.08**
1.0	19/113	pr
1.0	10/27	protein 0.04, domain 0.03, family 0.02, sequence 0.02
1.0	10/26	**gene 0.06**, **expression 0.03**, **arabidopsis 0.02**
1.0	16/98	**protein 0.13**

Uncertain Diagnosis Project

CCHMC Hospital Medicine Division

MetaMap

classify based on...

- symptoms
- disorders/diagnoses
- tests/labs
- specialties
- treatments

Tier 1	Tier 2
differential	if
etiology	likely
uncertain	consult*
unclear	could
possib*	may
consider	unknown
vs	although
abdominal/abdominal pain	suggest*
	however
	elevated
	broad
	further workup/work up

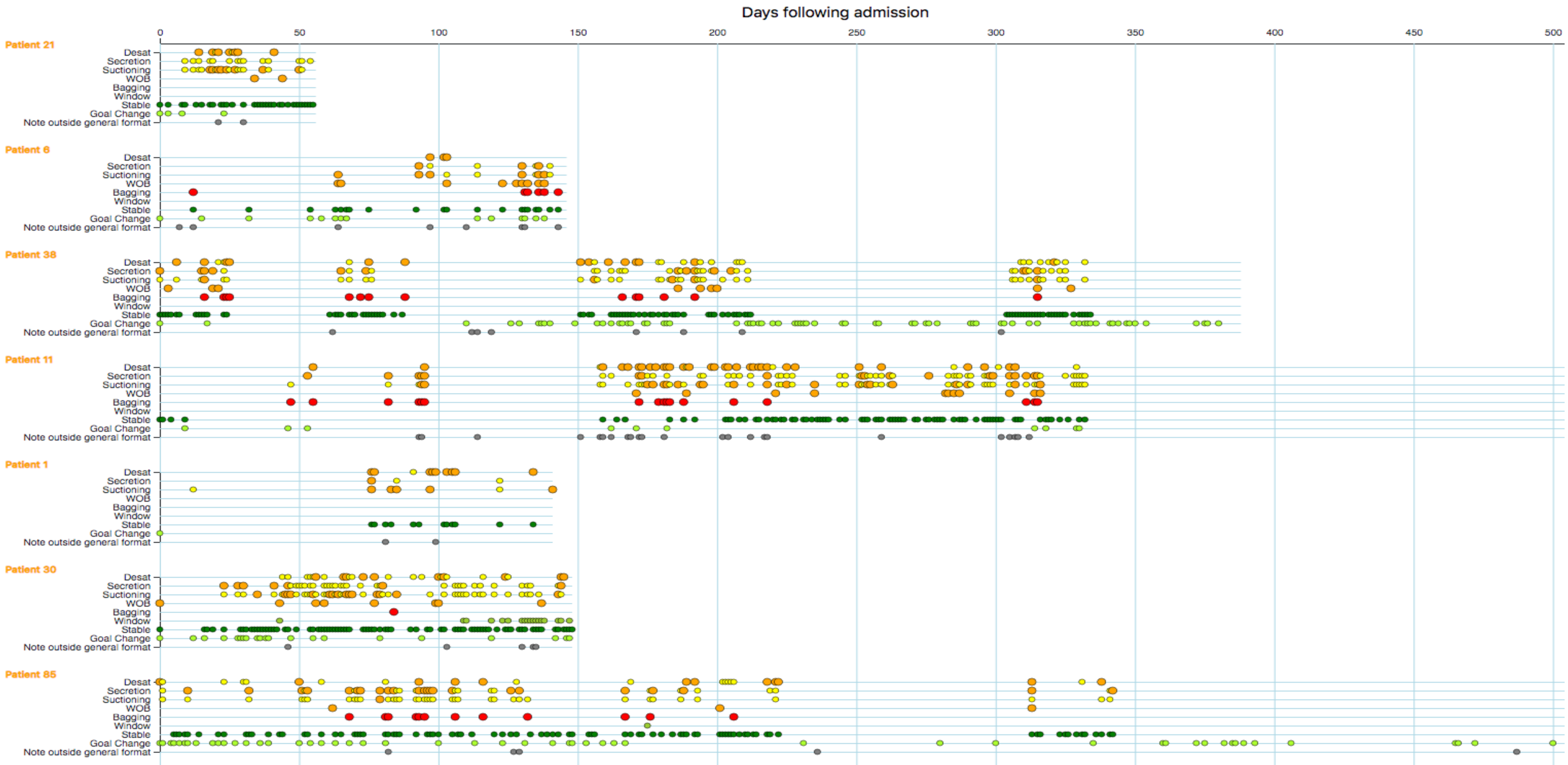
Uncertain Case

Unclear diagnosis at this time, but differential would include post-viral gastroparesis/ileus, although severe intermittent abdominal pain would not be consistent with that diagnosis. Could have intermittent intussusception or volvulus, with a lead point of an enlarged lymph node in the setting of recent viral gastroenteritis. Renal colic is a possibility with the description of “writhing” in pain, but pain is not localized to the back or flanks and no blood of other abnormality seen on UA. Biliary colic could be considered, although would be unusual in her age range and without associated with food. Appendicitis remains on the differential, as was not visualized on ultrasound, but exam findings not consistent with the diagnosis.

Using Linguistic Trends to Improve Patient Outcomes

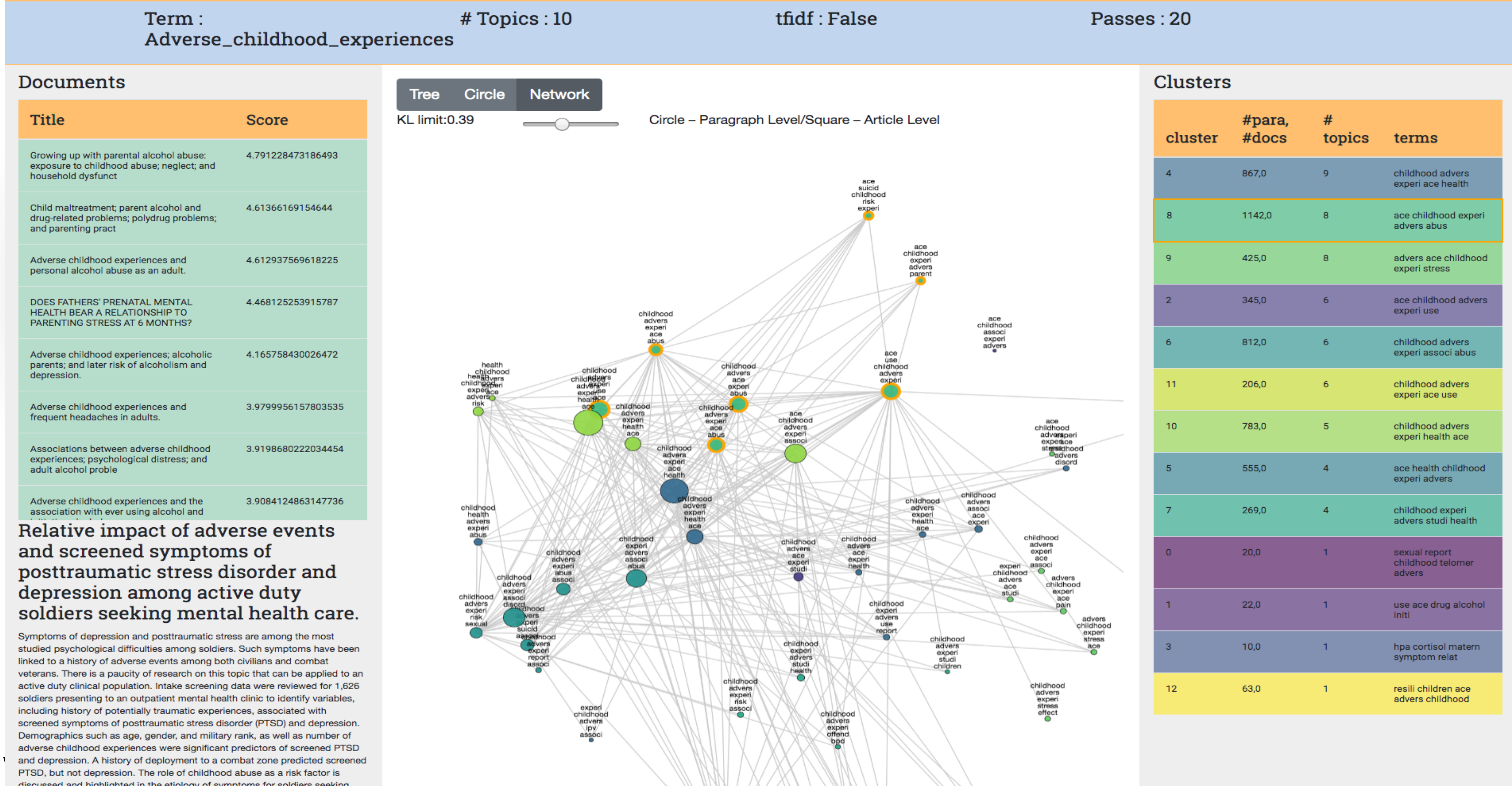
University of CINCINNATI | LIBRARIES

Vent Notes Prototype



Human Expression and the Social Determinants of Health

University of Cincinnati | LIBRARIES



Term : Adverse_childhood_experiences

Topics : 10

tfidf : False

Passes : 20

Documents

Title	Score
Growing up with parental alcohol abuse: exposure to childhood abuse; neglect; and household dysfunct	4.791228473186493
Child maltreatment; parent alcohol and drug-related problems; polydrug problems; and parenting pract	4.61366169154644
Adverse childhood experiences and personal alcohol abuse as an adult.	4.612937569618225
DOES FATHERS' PRENATAL MENTAL HEALTH BEAR A RELATIONSHIP TO PARENTING STRESS AT 6 MONTHS?	4.468125253915787
Adverse childhood experiences; alcoholic parents; and later risk of alcoholism and depression.	4.165758430026472
Adverse childhood experiences and frequent headaches in adults.	3.9799956157803535
Associations between adverse childhood experiences; psychological distress; and adult alcohol proble	3.9198680222034454
Adverse childhood experiences and the association with ever using alcohol and	3.9084124863147736

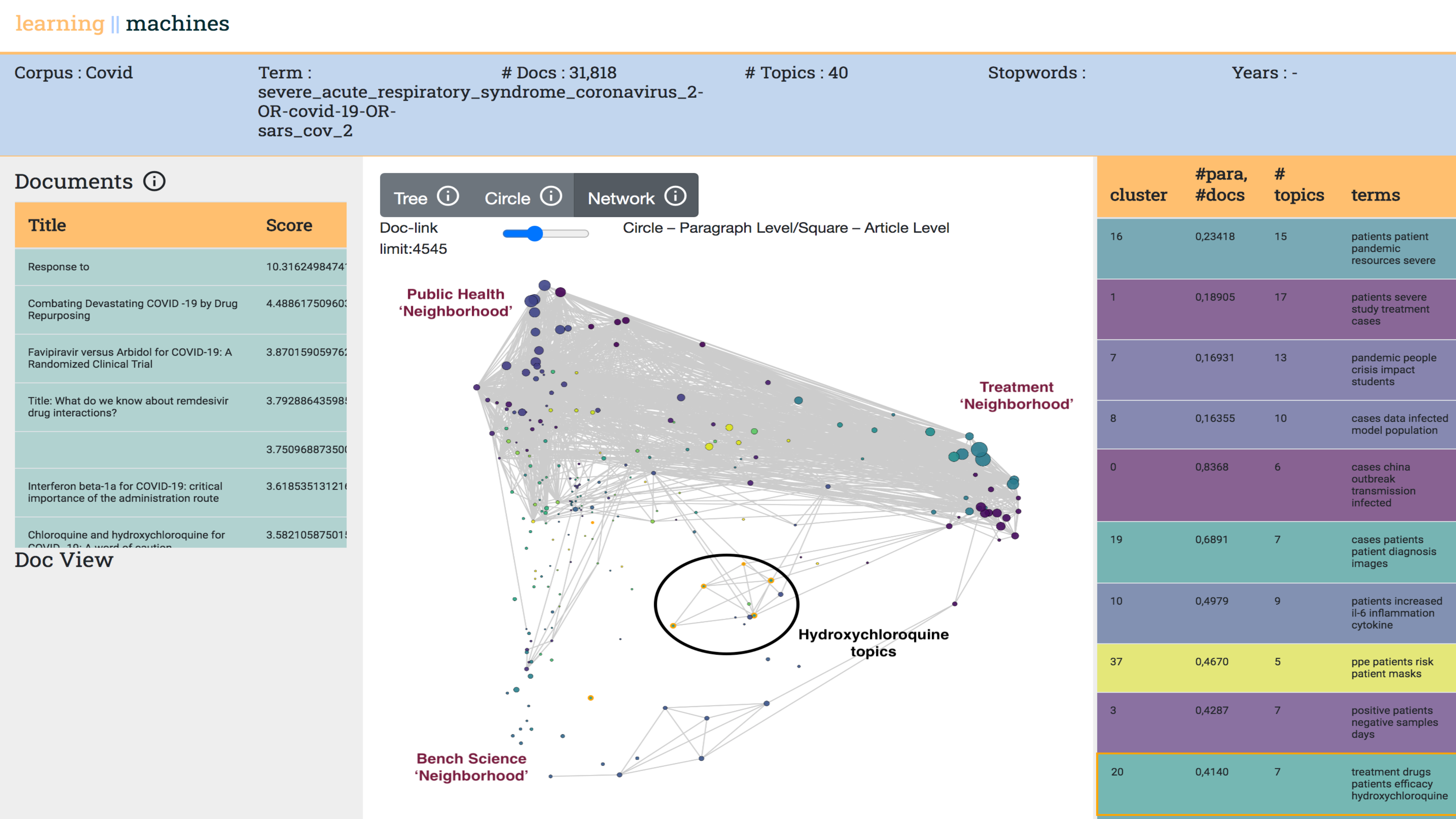
Relative impact of adverse events and screened symptoms of posttraumatic stress disorder and depression among active duty soldiers seeking mental health care.

Symptoms of depression and posttraumatic stress are among the most studied psychological difficulties among soldiers. Such symptoms have been linked to a history of adverse events among both civilians and combat veterans. There is a paucity of research on this topic that can be applied to an active duty clinical population. Intake screening data were reviewed for 1,626 soldiers presenting to an outpatient mental health clinic to identify variables, including history of potentially traumatic experiences, associated with screened symptoms of posttraumatic stress disorder (PTSD) and depression. Demographics such as age, gender, and military rank, as well as number of adverse childhood experiences were significant predictors of screened PTSD and depression. A history of deployment to a combat zone predicted screened PTSD, but not depression. The role of childhood abuse as a risk factor is discussed and highlighted in the etiology of symptoms for soldiers seeking

Tree
Circle
Network
KL limit:0.39
Circle – Paragraph Level/Square – Article Level
ace suicid childhood risk experi
ace childhood experi advers parent
ace childhood associ experi advers
childhood advers experi ace abus
ace use childhood advers experi
health childhood advers experi ace risk
childhood advers experi ace abus
childhood advers experi health ace
ace childhood advers experi associ
childhood advers experi ace abus
childhood advers experi ace health
childhood advers experi health ace
ace childhood advers experi ace stress childhood advers disord
childhood health advers experi abus
childhood advers experi abus associ
childhood experi advers associ abus
childhood advers ace experi studi
childhood advers ace experi health
childhood advers experi health ace
childhood advers associ ace experi
childhood advers experi ace associ
experi childhood advers ace studi
advers childhood experi ace pain
childhood advers experi risk sexual
childhood advers associ disord
childhood advers experi suicid
childhood advers experi report associ
childhood experi advers use report
childhood advers experi studi children
advers childhood experi stress ace
childhood experi advers studi health
childhood advers experi risk associ
experi childhood advers ipv associ
childhood advers experi stress effect
childhood advers experi offend bpd

Clusters

cluster	#para, #docs	# topics	terms
4	867,0	9	childhood advers experi ace health
8	1142,0	8	ace childhood experi advers abus
9	425,0	8	advers ace childhood experi stress
2	345,0	6	ace childhood advers experi use
6	812,0	6	childhood advers experi associ abus
11	206,0	6	childhood advers experi ace use
10	783,0	5	childhood advers experi health ace
5	555,0	4	ace health childhood experi advers
7	269,0	4	childhood experi advers studi health
0	20,0	1	sexual report childhood telomer advers
1	22,0	1	use ace drug alcohol initi
3	10,0	1	hpa cortisol matern symptom relat
12	63,0	1	resili children ace advers childhood



learning || machines

Corpus : Covid

Term : severe_acute_respiratory_syndrome_coronavirus_2-OR-covid-19-OR-sars_cov_2

Docs : 31,818

Topics : 40

Stopwords :

Years : -

Documents ⓘ

Title	Score
Response to	10.3162498474
Combating Devastating COVID -19 by Drug Repurposing	4.48861750960
Favipiravir versus Arbidol for COVID-19: A Randomized Clinical Trial	3.87015905976
Title: What do we know about remdesivir drug interactions?	3.79288643598
	3.75096887350
Interferon beta-1a for COVID-19: critical importance of the administration route	3.61853513121
Chloroquine and hydroxychloroquine for COVID-19: A word of caution	3.58210587501

Doc View

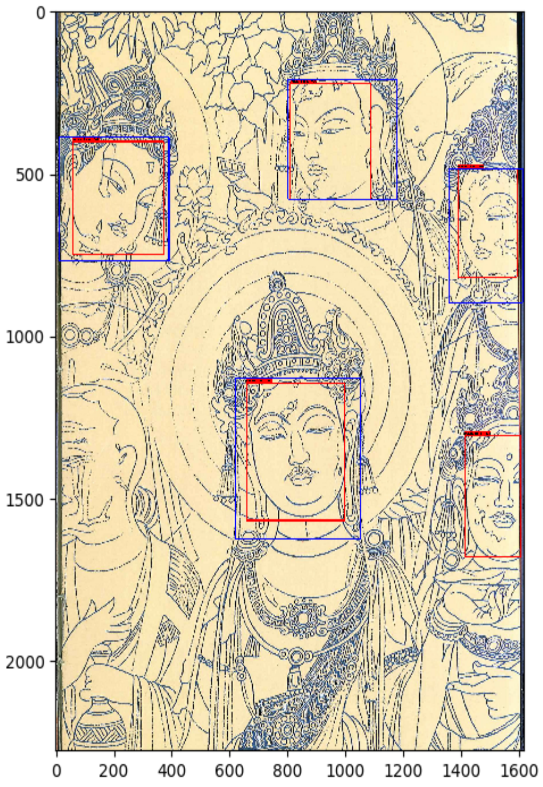
Tree ⓘ Circle ⓘ Network ⓘ

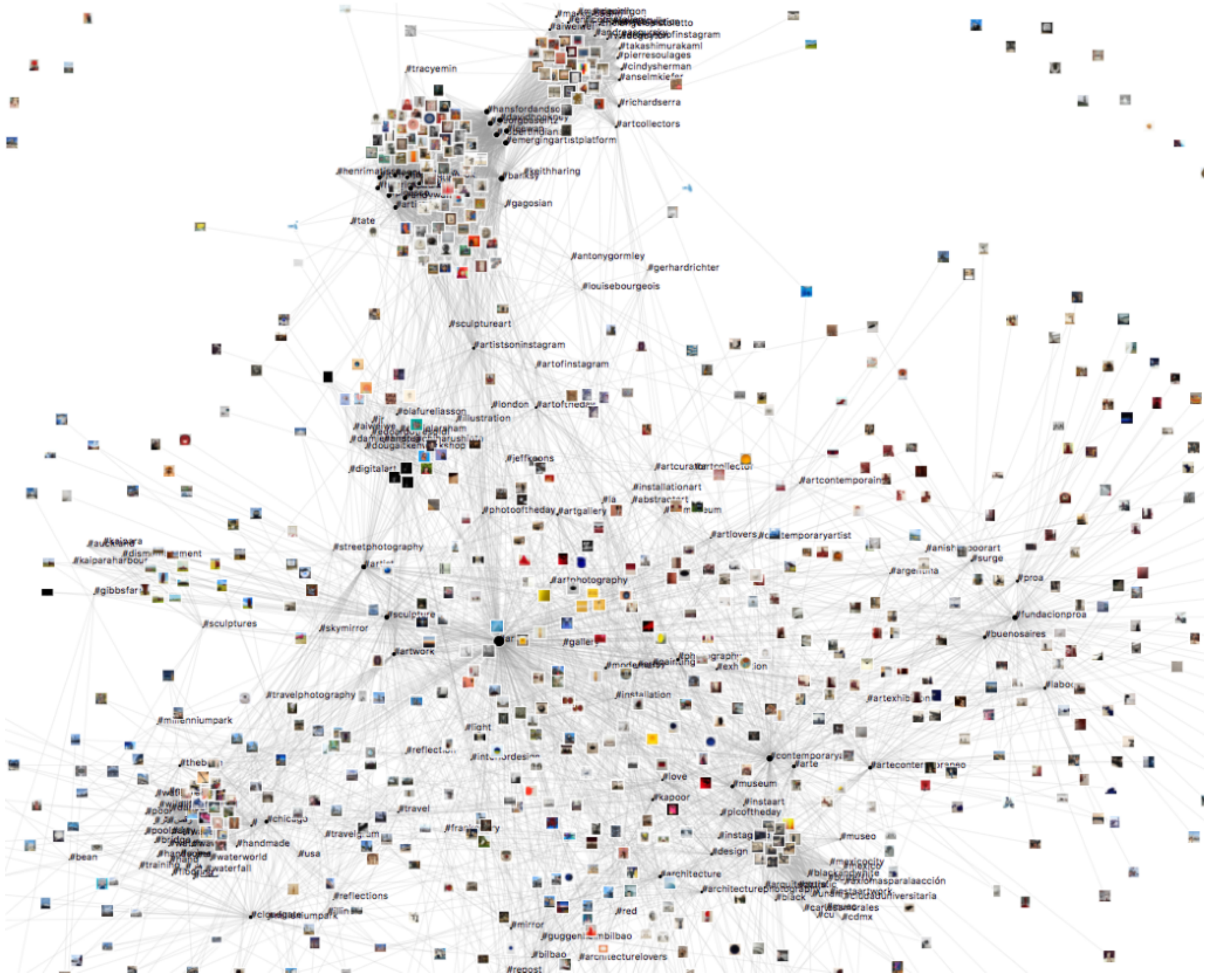
Doc-link limit:4545

Circle – Paragraph Level/Square – Article Level

cluster	#para, #docs	# topics	terms
16	0,23418	15	patients patient pandemic resources severe
1	0,18905	17	patients severe study treatment cases
7	0,16931	13	pandemic people crisis impact students
8	0,16355	10	cases data infected model population
0	0,8368	6	cases china outbreak transmission infected
19	0,6891	7	cases patients patient diagnosis images
10	0,4979	9	patients increased il-6 inflammation cytokine
37	0,4670	5	ppe patients risk patient masks
3	0,4287	7	positive patients negative samples days
20	0,4140	7	treatment drugs patients efficacy hydroxychloroquine

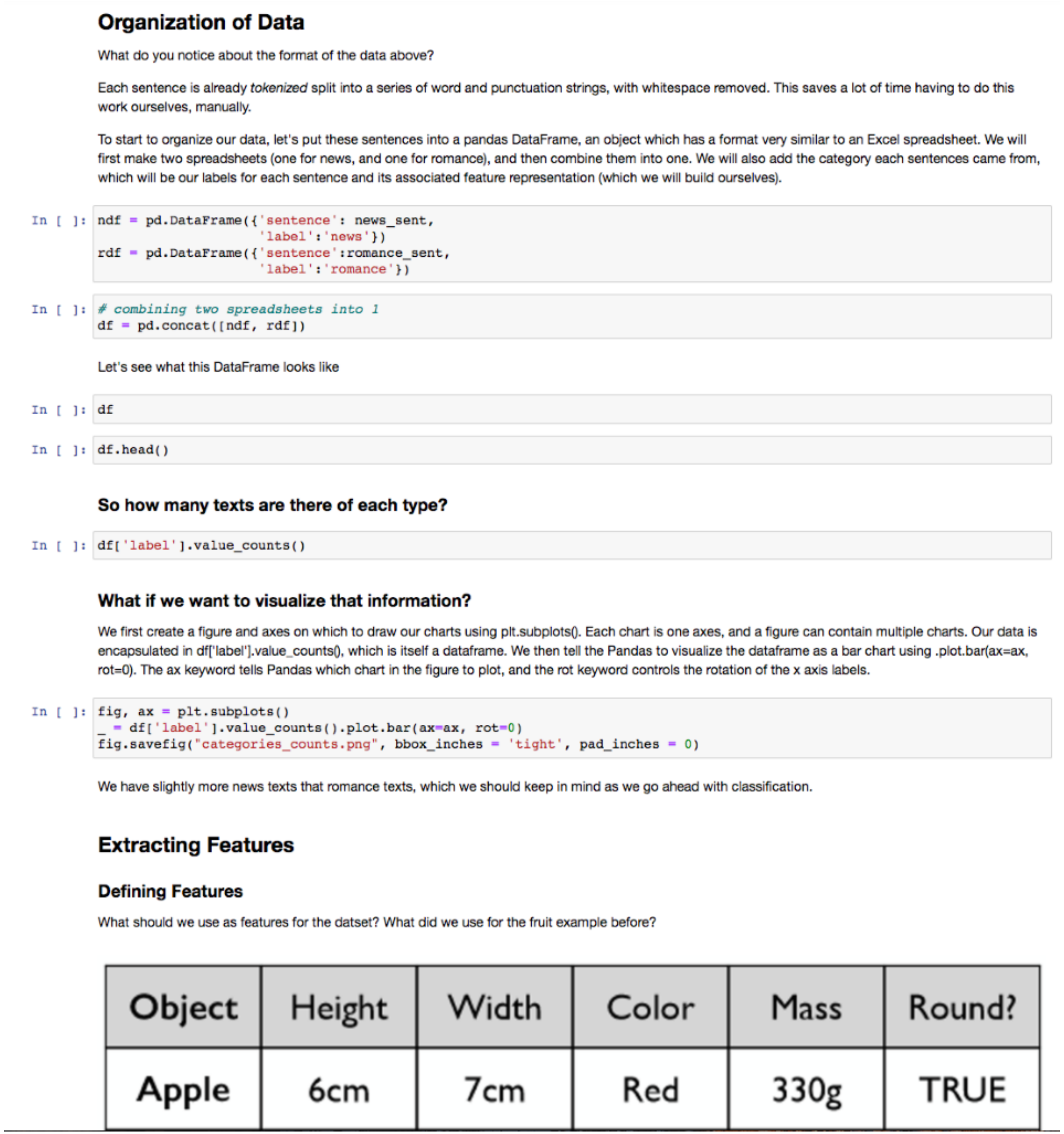
Second Phase: Multimodal ML




anishkapoor

Removing Hashtags with fewer than 10 occurrences

Second Phase: Jupyter Notebooks Pipeline



Organization of Data

What do you notice about the format of the data above?

Each sentence is already *tokenized* split into a series of word and punctuation strings, with whitespace removed. This saves a lot of time having to do this work ourselves, manually.

To start to organize our data, let's put these sentences into a pandas DataFrame, an object which has a format very similar to an Excel spreadsheet. We will first make two spreadsheets (one for news, and one for romance), and then combine them into one. We will also add the category each sentences came from, which will be our labels for each sentence and its associated feature representation (which we will build ourselves).

```
In [ ]: ndf = pd.DataFrame({'sentence': news_sent,
                            'label':'news'})
        rdf = pd.DataFrame({'sentence':romance_sent,
                            'label':'romance'})
```

```
In [ ]: # combining two spreadsheets into 1
        df = pd.concat([ndf, rdf])
```

Let's see what this DataFrame looks like

```
In [ ]: df
```

```
In [ ]: df.head()
```

So how many texts are there of each type?

```
In [ ]: df['label'].value_counts()
```

What if we want to visualize that information?

We first create a figure and axes on which to draw our charts using plt.subplots(). Each chart is one axes, and a figure can contain multiple charts. Our data is encapsulated in df['label'].value_counts(), which is itself a dataframe. We then tell the Pandas to visualize the dataframe as a bar chart using .plot.bar(ax=ax, rot=0). The ax keyword tells Pandas which chart in the figure to plot, and the rot keyword controls the rotation of the x axis labels.

```
In [ ]: fig, ax = plt.subplots()
        _ = df['label'].value_counts().plot.bar(ax=ax, rot=0)
        fig.savefig("categories_counts.png", bbox_inches = 'tight', pad_inches = 0)
```

We have slightly more news texts that romance texts, which we should keep in mind as we go ahead with classification.

Extracting Features

Defining Features

What should we use as features for the datset? What did we use for the fruit example before?

Object	Height	Width	Color	Mass	Round?
Apple	6cm	7cm	Red	330g	TRUE

Let's Work Together

- Model of models platform: https://modelofmodels.io
- DSC website: http://dsc.uc.edu

Second Grant Objectives:

- 15 Subgrants through Mellon Foundation Award using our technologies.
- Expand use cases and projects deploying MoM and Jupyter library.
- Experimental use of MoM for data services.
- Partnerships with external collaborators engaged in digital scholarship.

Acknowledgements:
We are grateful to the Andrew W. Mellon Foundation, Public Knowledge Program for their support.