Personal & Collaborative Knowledge Management Systems

Infrastructure for Idea Management & Research Development

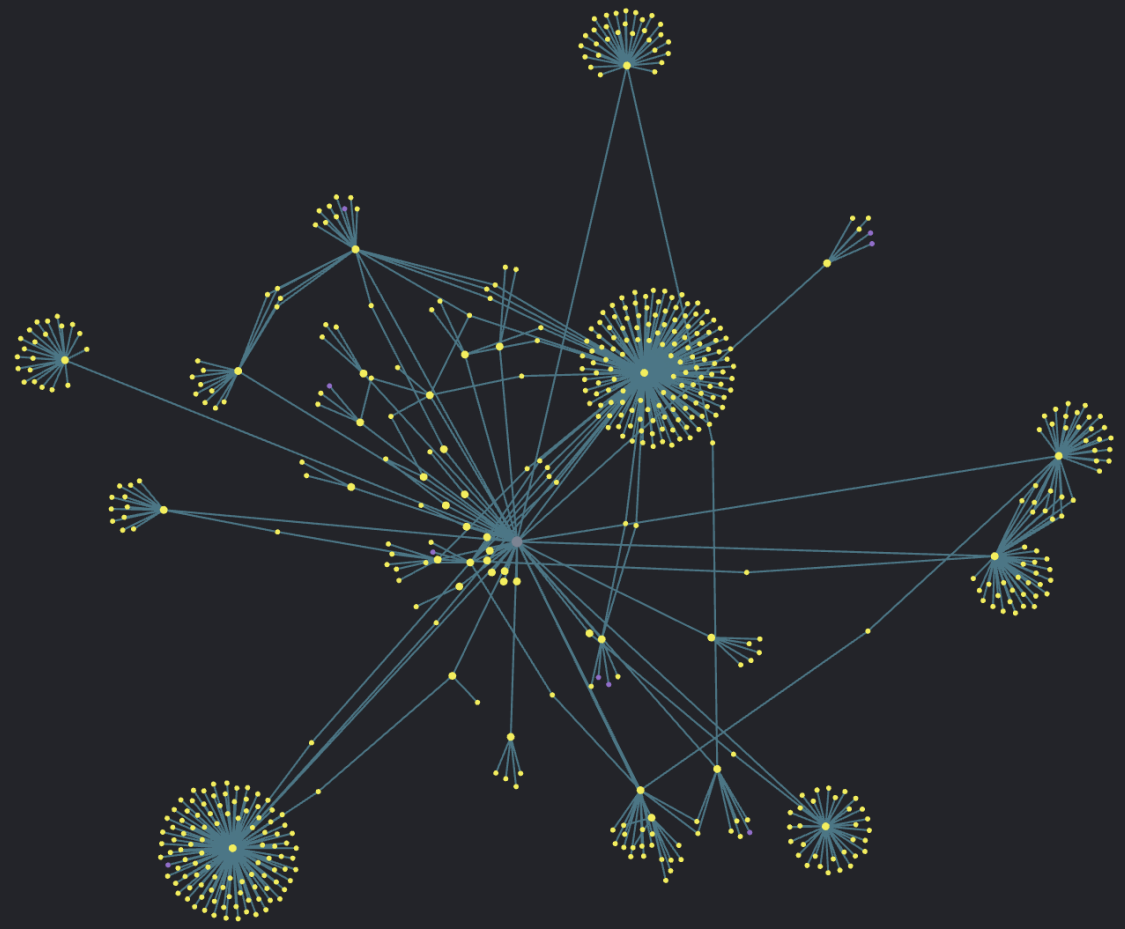
Brian Mathews | Carnegie Mellon

CNI Fall Meeting 2024

HYPOTHESIS:

the way we organize

thoughts | ideas | notes | projects | tasks

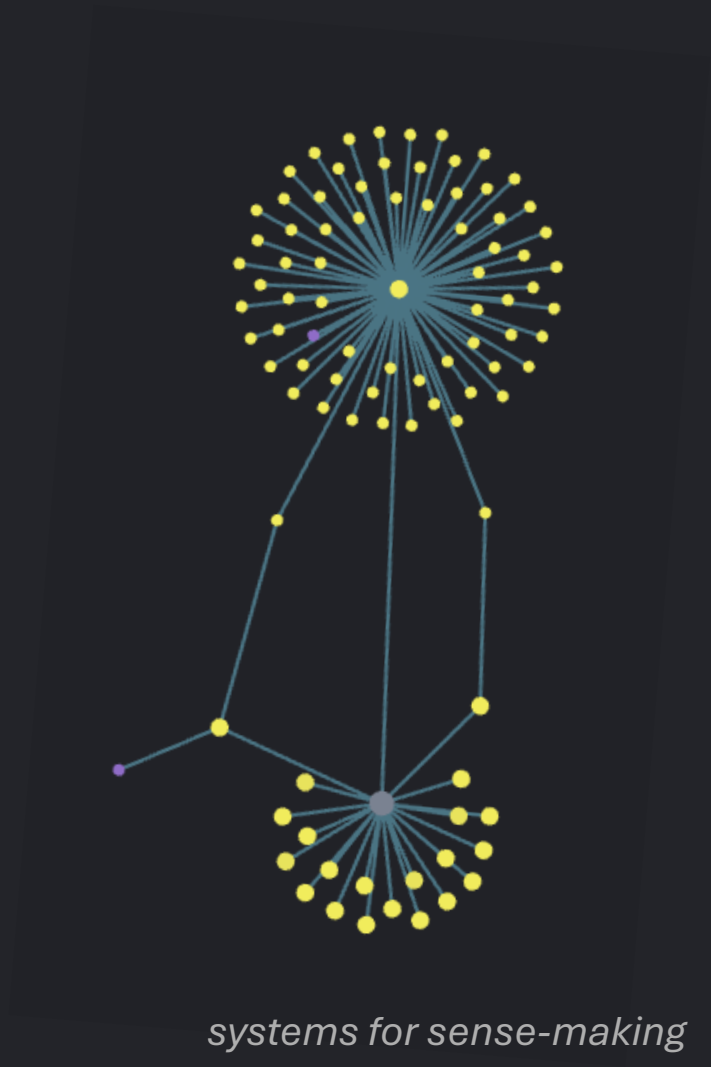


constellations of personal knowledge

HYPOTHESIS:

the way we organize
thoughts | ideas | notes | projects | tasks

shapes
what we do | how we do it | what we create



systems for sense-making

HYPOTHESIS:

the way we organize
thoughts | ideas | notes | projects | tasks

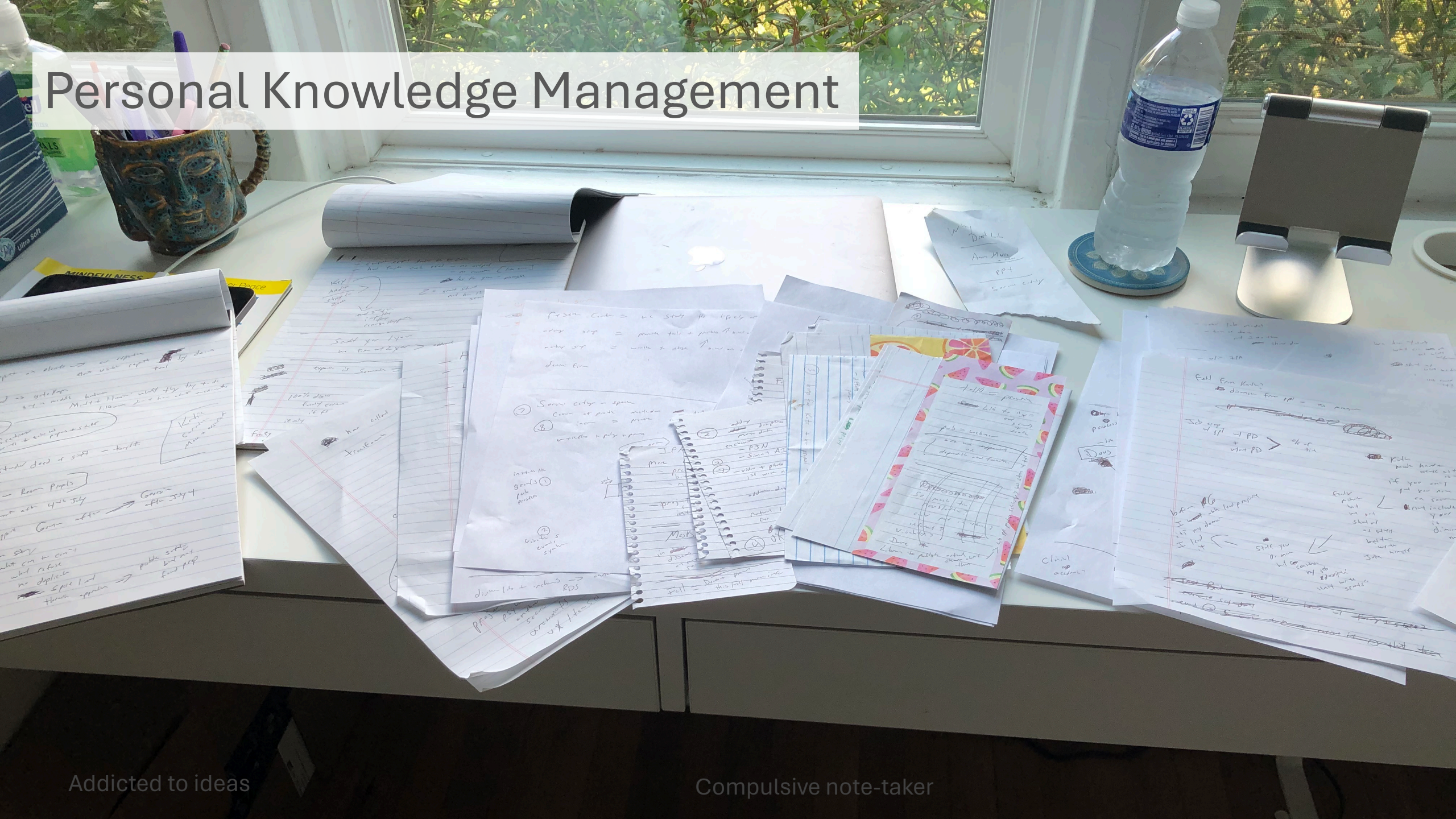
shapes
what we do | how we do it | what we create

and the way we *feel* about all this
the structure | the aesthetic | the flow of it
impacts how we take action

Cognitive Scaffolding

What if the way we manage our information reflects the way we manage our lives?

Personal Knowledge Management



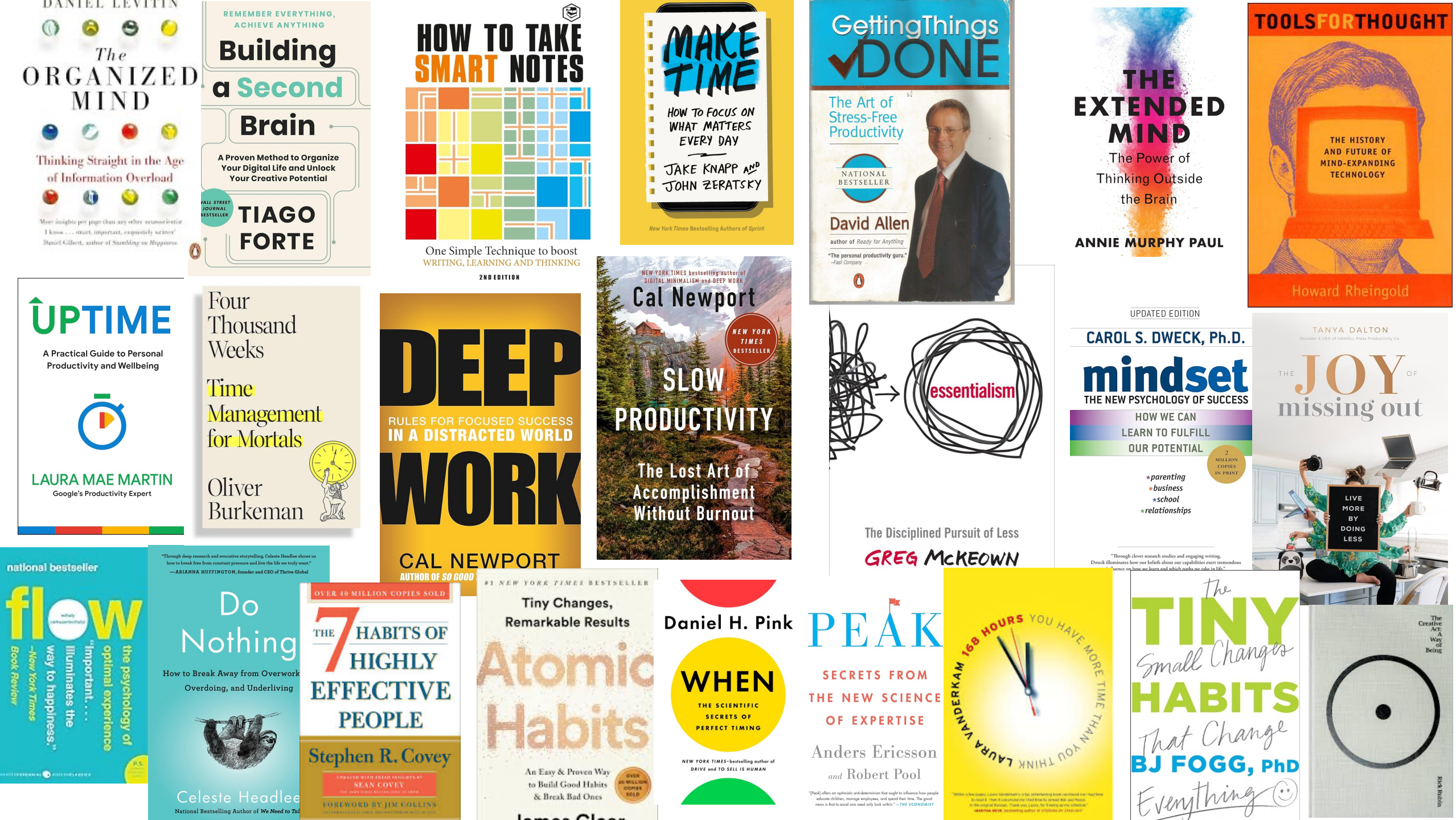
Addicted to ideas

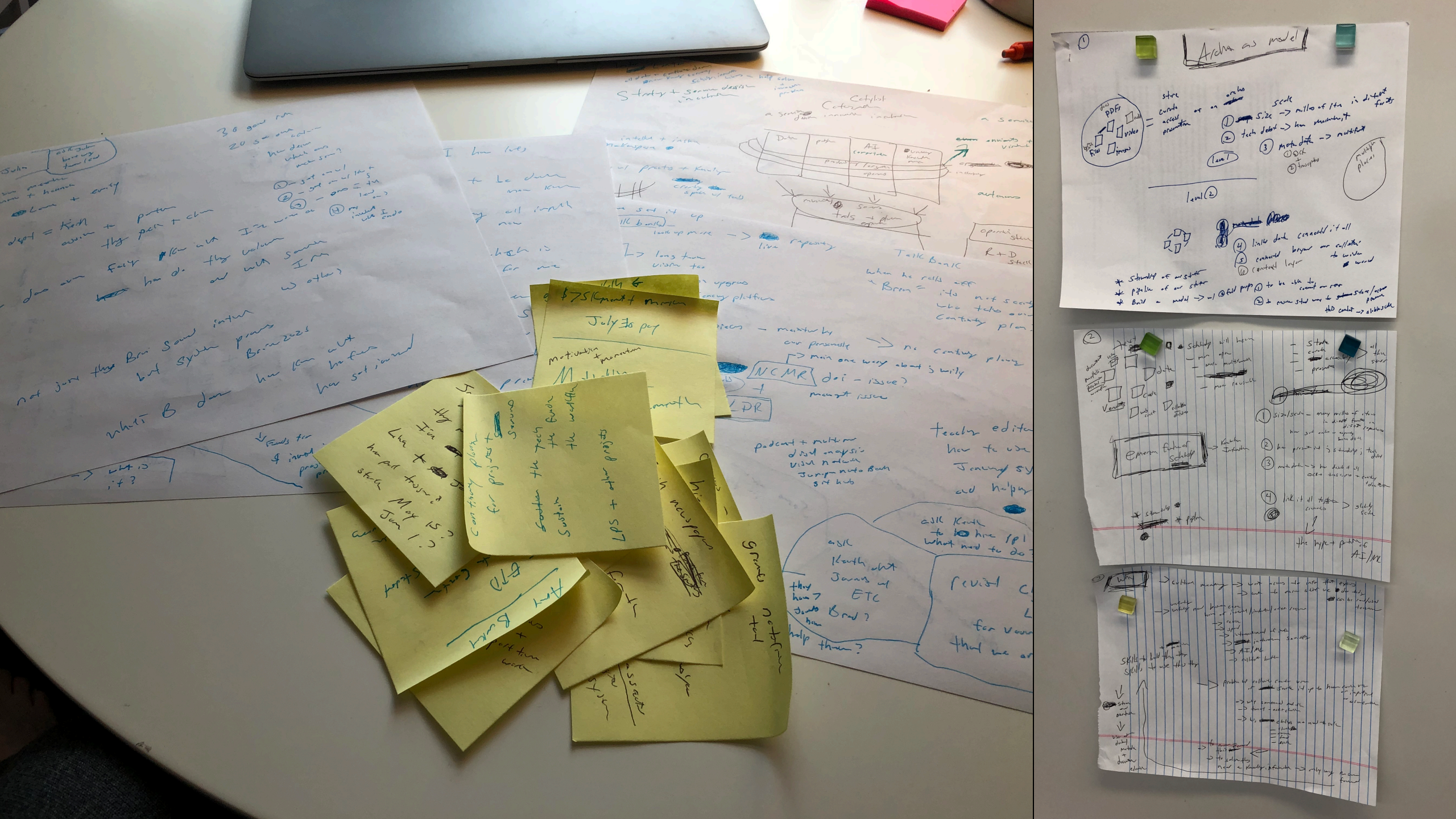
Compulsive note-taker

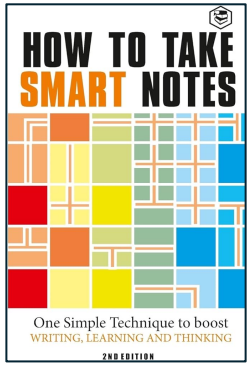
- Presentations
- Conversations
- Readings
- Podcasts
- Emails

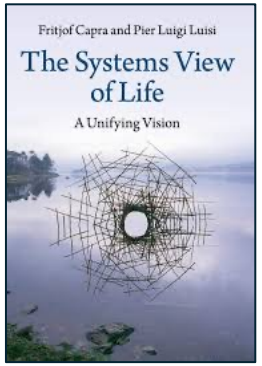
???

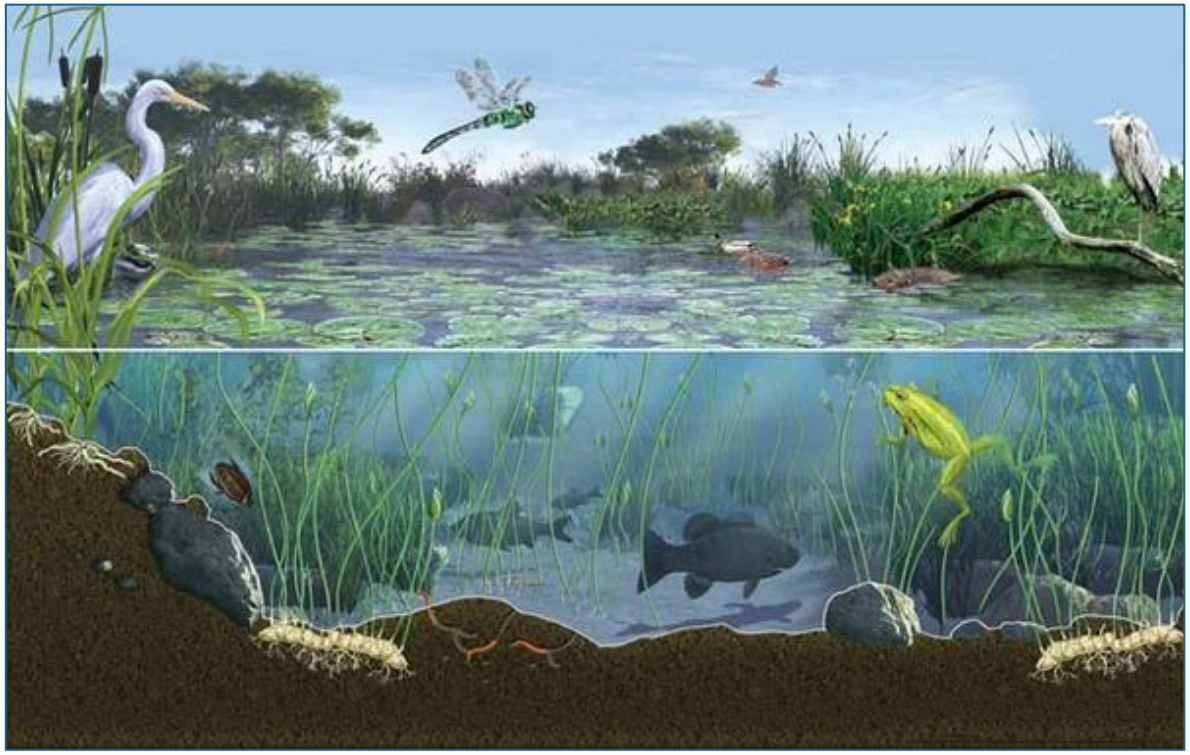
- Meeting Prep
- Email Drafts
- Articles
- Presentations
- Proposals
- Decisions
- Opinions
- Feedback
- Projects
- Experiments


DANIEL LEVITIN
The ORGANIZED MIND
Thinking Straight in the Age of Information Overload
REMEMBER EVERYTHING, ACHIEVE ANYTHING
Building a Second Brain
A Proven Method to Organize Your Digital Life and Unlock Your Creative Potential
WALL STREET JOURNAL BESTSELLER
TIAGO FORTE
HOW TO TAKE SMART NOTES
One Simple Technique to boost WRITING, LEARNING AND THINKING
2ND EDITION
MAKE TIME
HOW TO FOCUS ON WHAT MATTERS EVERY DAY
JAKE KNAPP AND JOHN ZERATSKY
New York Times Bestselling Authors of Sprint
Getting Things DONE
The Art of Stress-Free Productivity
NATIONAL BESTSELLER
David Allen
author of Ready for Anything
"The personal productivity guru." –Fast Company
THE EXTENDED MIND
The Power of Thinking Outside the Brain
ANNIE MURPHY PAUL
TOOLS FOR THOUGHT
THE HISTORY AND FUTURE OF MIND-EXPANDING TECHNOLOGY
Howard Rheingold
UPTIME
A Practical Guide to Personal Productivity and Wellbeing
LAURA MAE MARTIN
Google's Productivity Expert
Four Thousand Weeks
Time Management for Mortals
Oliver Burkeman
DEEP WORK
RULES FOR FOCUSED SUCCESS IN A DISTRACTED WORLD
CAL NEWPORT
AUTHOR OF SO GOOD
NEW YORK TIMES bestselling author of DIGITAL MINIMALISM and DEEP WORK
Cal Newport
NEW YORK TIMES BESTSELLER
SLOW PRODUCTIVITY
The Lost Art of Accomplishment Without Burnout
essentialism
The Disciplined Pursuit of Less
GREG McKEOWN
UPDATED EDITION
CAROL S. DWECK, Ph.D.
mindset
THE NEW PSYCHOLOGY OF SUCCESS
HOW WE CAN LEARN TO FULFILL OUR POTENTIAL
2 MILLION COPIES IN PRINT
*parenting
*business
*school
*relationships
TANYA DALTON
Founder & CEO of InkWELL Press Productivity Co.
THE JOY OF missing out
LIVE MORE BY DOING LESS
national bestseller
flow
the psychology of optimal experience
"Important. . . . illuminates the way to happiness." –New York Times Book Review
"Through deep research and evocative storytelling, Celeste Headlee shows us how to break free from constant pressure and live the life we truly want." —ARIANNA HUFFINGTON, founder and CEO of Thrive Global
Do Nothing
How to Break Away from Overwork, Overdoing, and Underliving
Celeste Headlee
National Bestselling Author of We Need to Tal
OVER 40 MILLION COPIES SOLD
THE 7 HABITS OF HIGHLY EFFECTIVE PEOPLE
Stephen R. Covey
SEAN COVEY
FOREWORD BY JIM COLLINS
#1 NEW YORK TIMES BESTSELLER
Tiny Changes, Remarkable Results
Atomic Habits
An Easy & Proven Way to Build Good Habits & Break Bad Ones
OVER 30 MILLION COPIES SOLD
Daniel H. Pink
WHEN
THE SCIENTIFIC SECRETS OF PERFECT TIMING
NEW YORK TIMES–bestselling author of DRIVE and TO SELL IS HUMAN
PEAK
SECRETS FROM THE NEW SCIENCE OF EXPERTISE
Anders Ericsson and Robert Pool
"[Peak] offers an optimistic anti-determinism that ought to influence how people educate children, manage employees, and spend their time. The good news is that to excel one need only look within." —THE ECONOMIST
LAURA VANDERKAM
168 HOURS YOU HAVE MORE TIME THAN YOU THINK
The TINY Small Changes HABITS That Change Everything
BJ FOGG, PhD
The Creative Act: A Way of Being
Rick Rubin









a fluid approach that could respond to changing conditions

- Ecosystem
- Adaptive
- Emergent
- Organic / Dynamic
- Not just taking notes -- creating an interconnected network

Inputs

- Presentations
- Conversations
- Readings
- Podcasts
- Emails

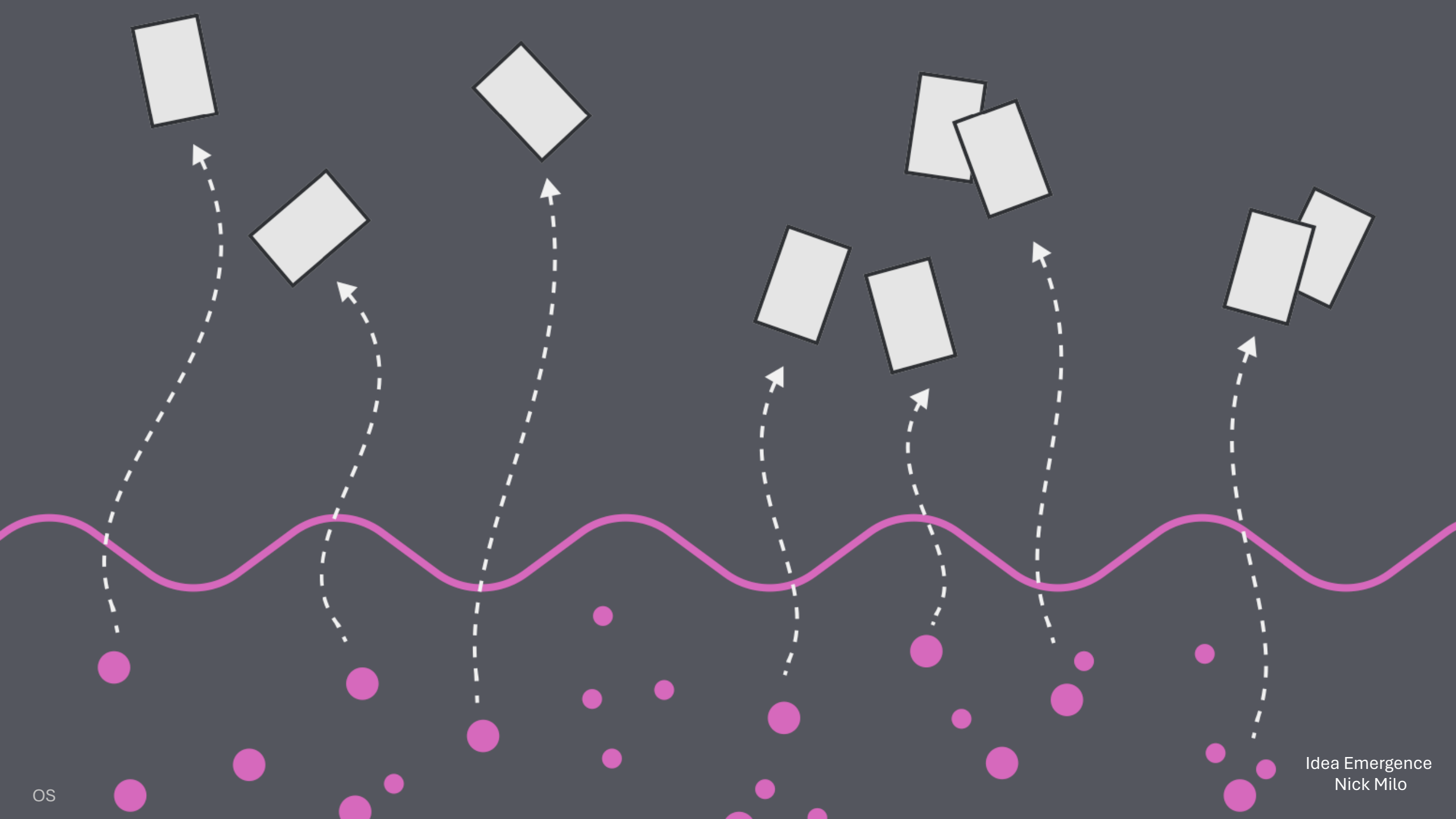
Processing

OBSIDIAN

open-source, customizable, note-taking environment
with dynamic linking & knowledge mapping

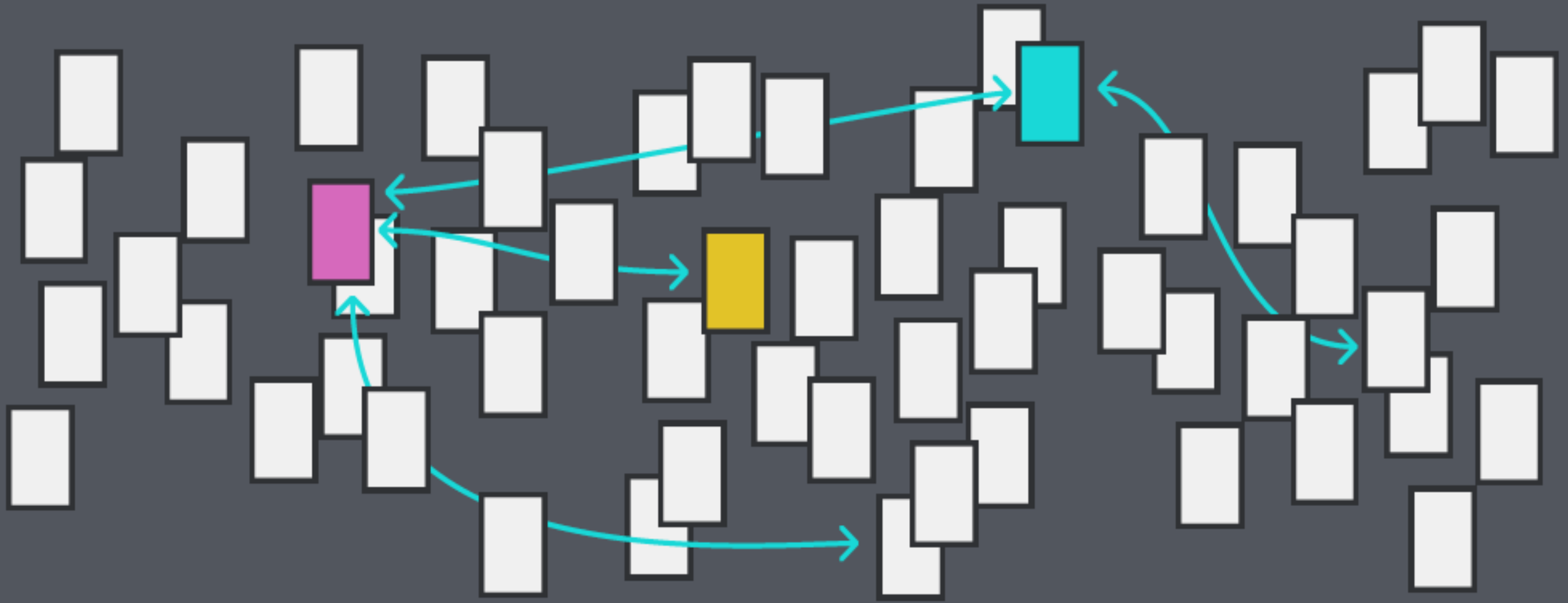
Outputs

- Meeting Prep
- Email Drafts
- Articles
- Presentations
- Proposals
- Decisions
- Opinions
- Feedback
- Projects
- Experiments


OS
Idea Emergence
Nick Milo

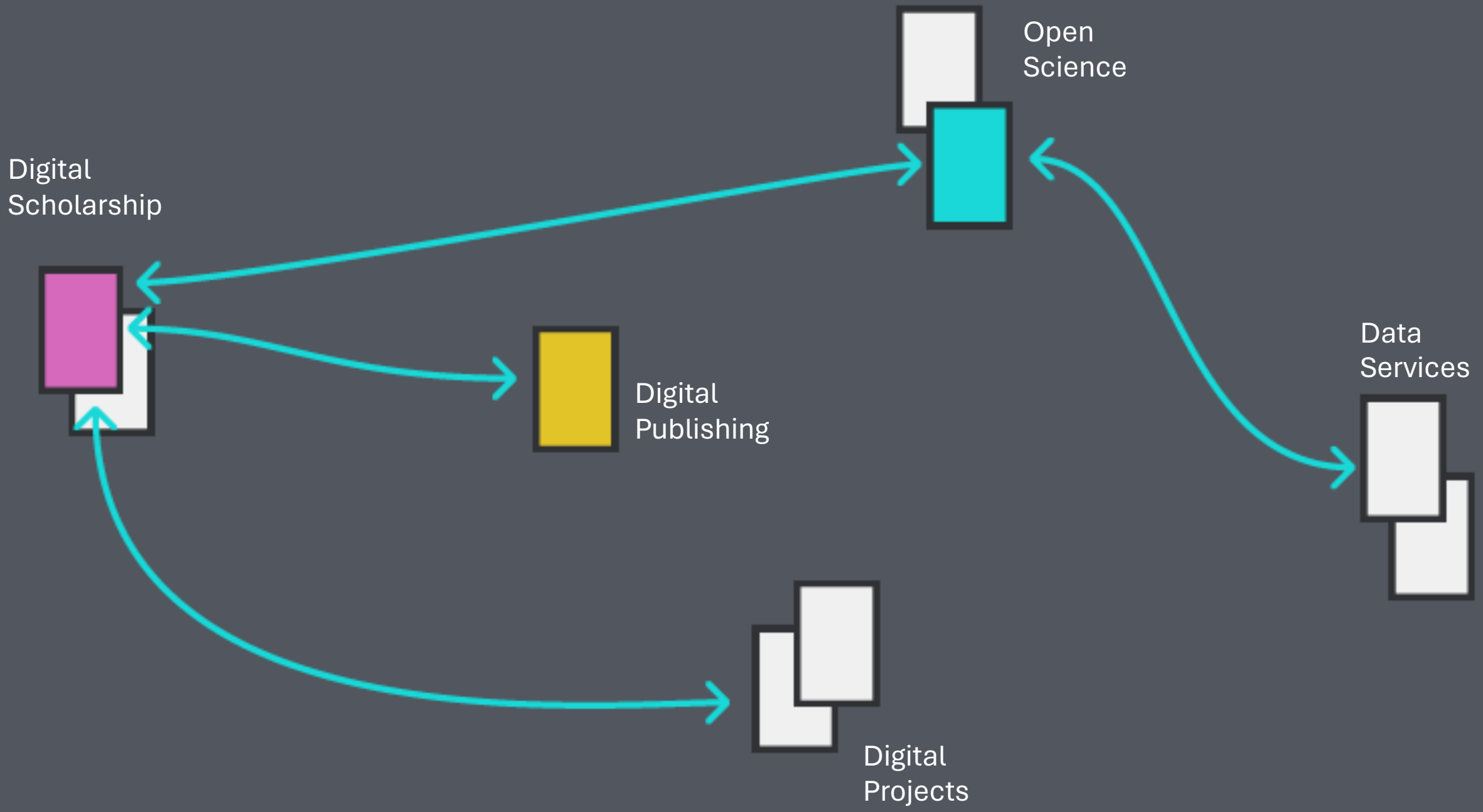
Ecosystem as Integrator

(convergence)

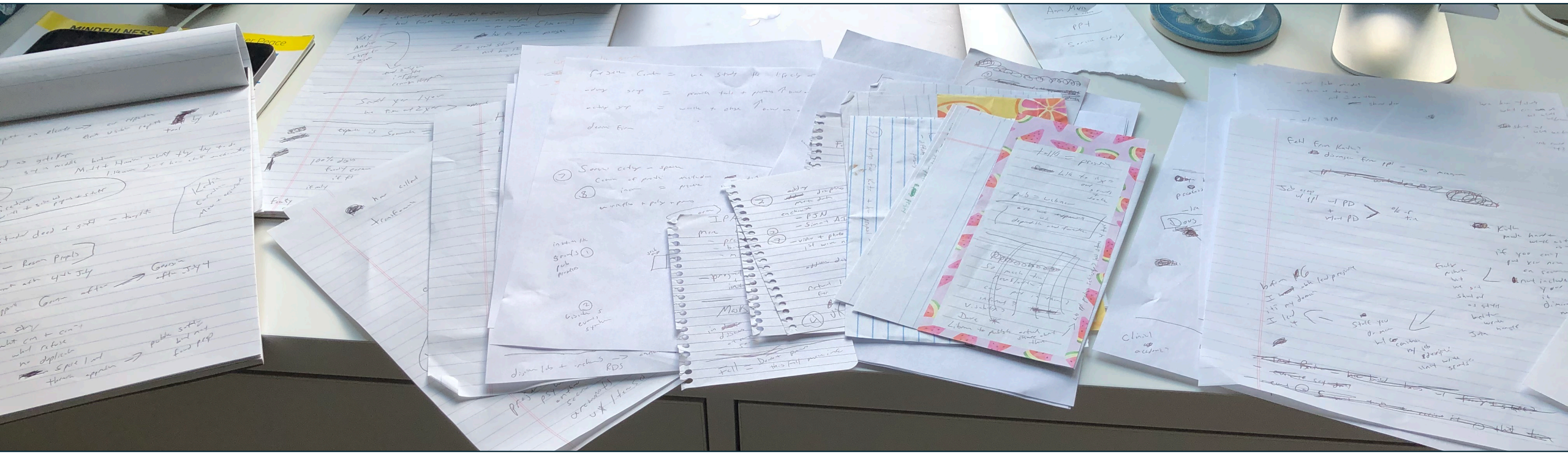


cyberinfrastructure, scholarly communications, preservation

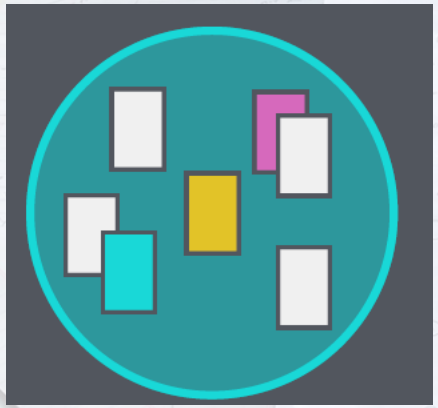
cyberinfrastructure, scholarly communications, preservation



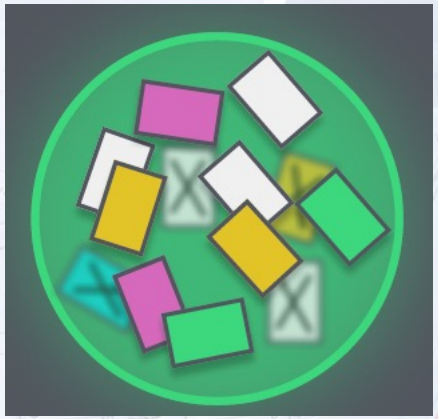
Ecosystem as Facilitator



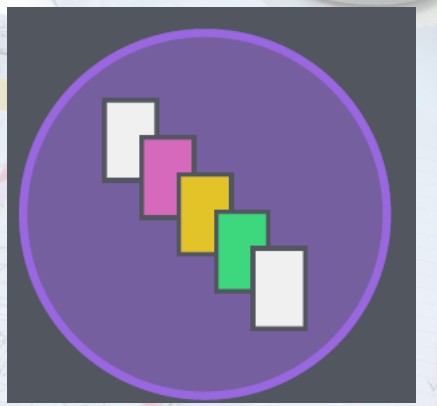
Ecosystem as Facilitator



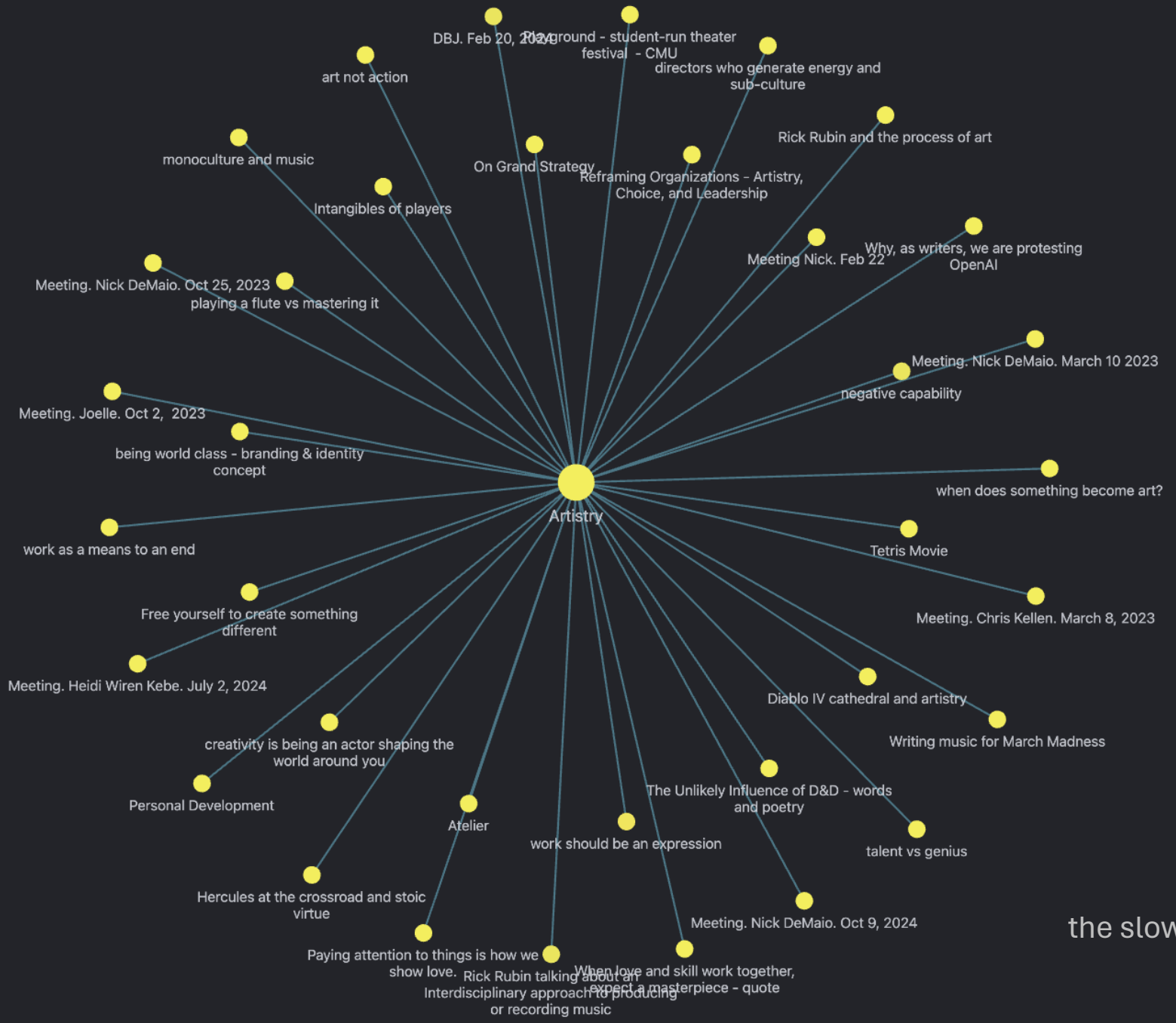
Assembling



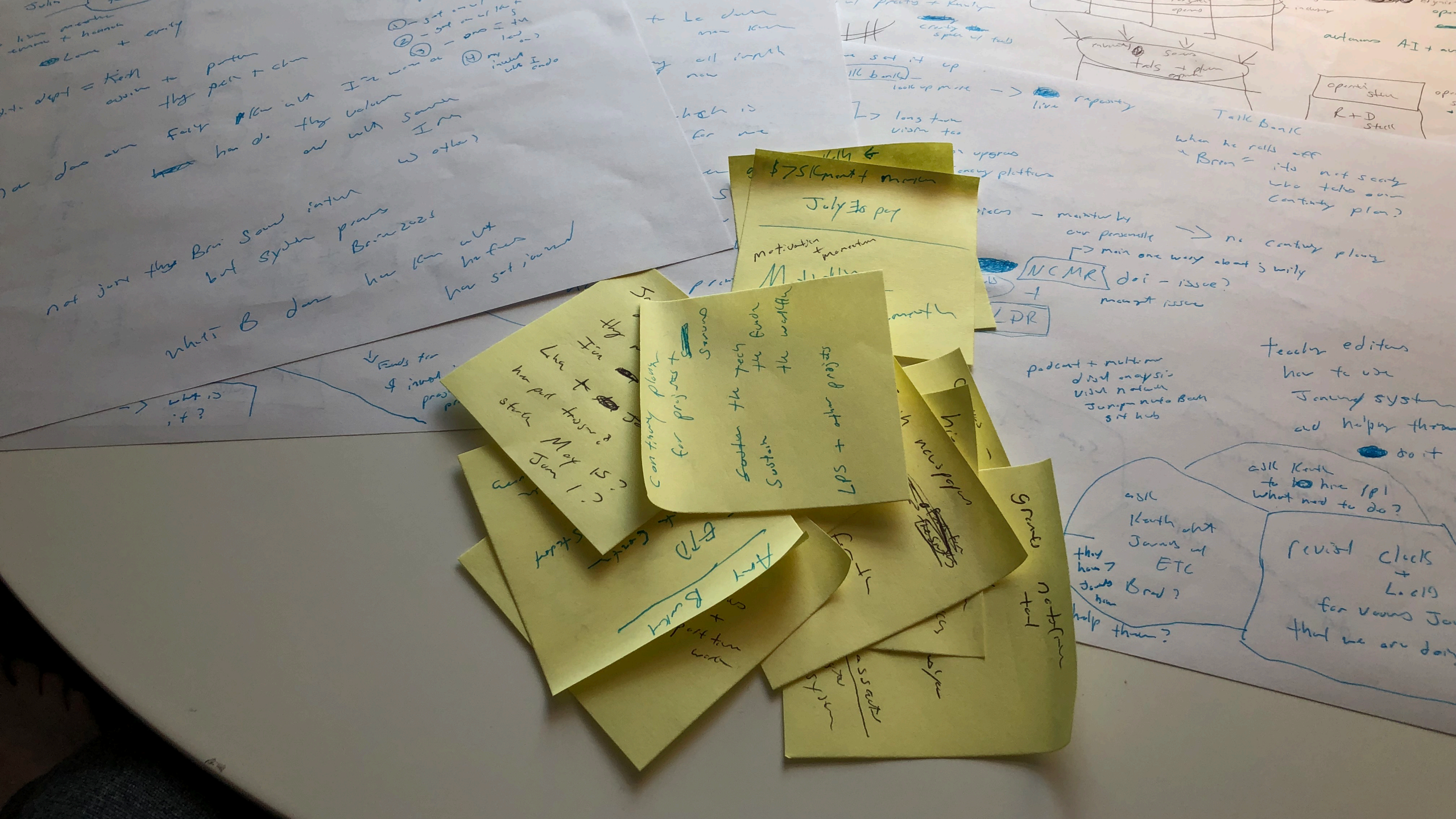
Colliding



Unifying



the slow accrual of insight


$75K grant + match
July 3e pay
Motivation + momentum
Continuity plan for projects
Sustain the tech
the funding
the workflow
LPS + other projects
NCMR
doi - issue?
manuscript issue
podcast + multimedia
Talk Basic
when he rolls off
Brian =
who takes over
Continuity plan?
teacher editions
how to use
Jamboard system
and helping them
do it
ask Keith
to hire IPI
what need to do?
ask
Keith what
Jamboard
ETC
Brad?
revisit clocks
+
Leaflet
for years Jamboard
that we are doing

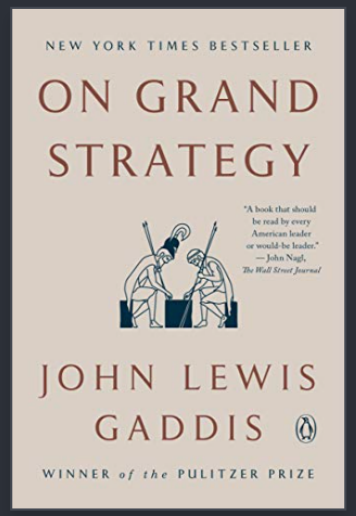

Thought Maps


AI


Jason Glenn

On Grand Strategy

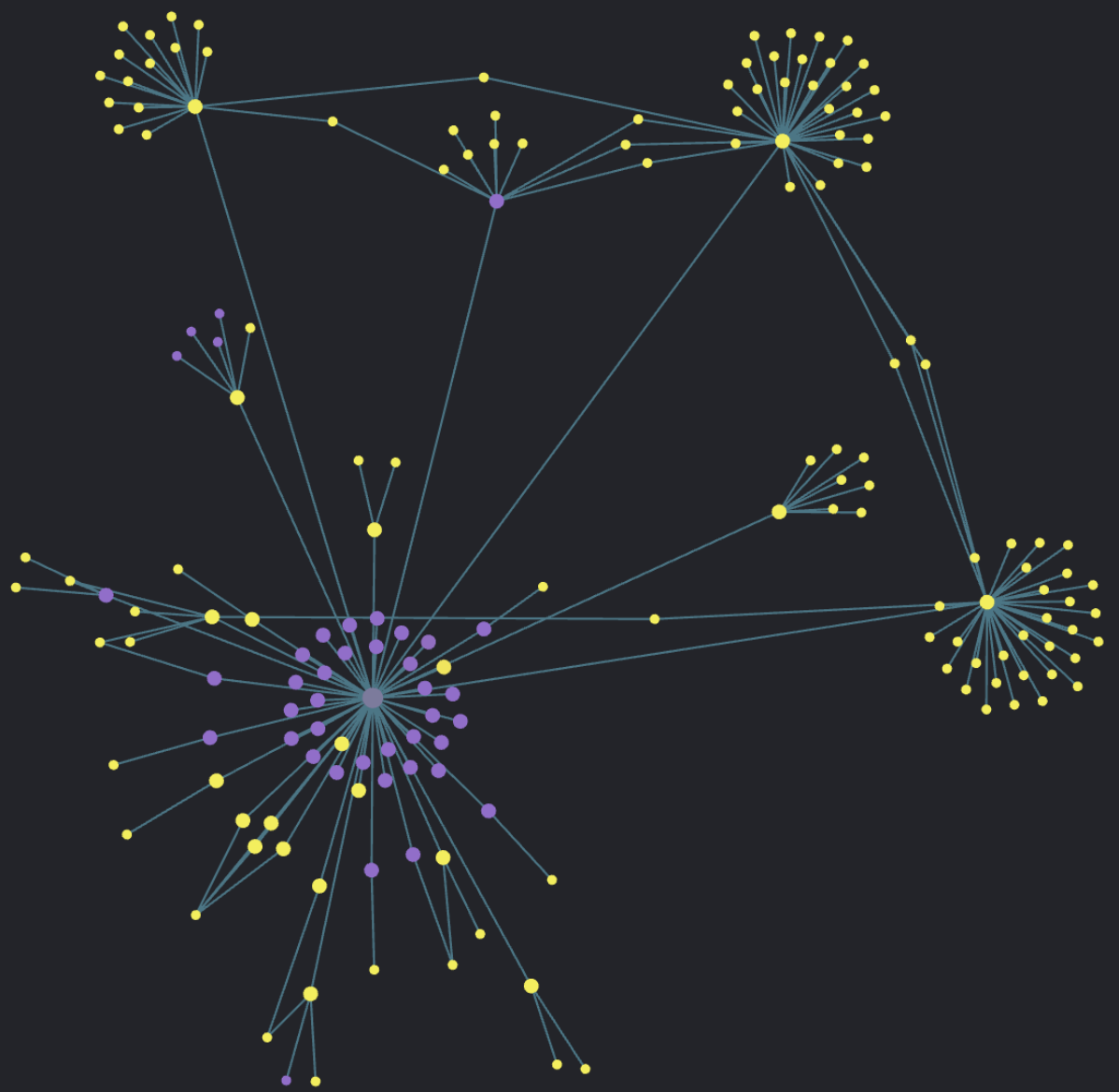
Author:: John Lewis Gaddis
tags:: #source/book
Processed: Oct 22, 2023



neighborhoods & intersections of thought

Key Ideas

- Xerxes, Hellespont



Home – Spring 2024

- Meetings
- Priorities
- Operational Matters
- Transition Design Seminar
- Writing & Presenting
- Idea Development
- Journal

interfaces & entry points

Table of contents for my thoughts

TD Book Outline

Transition Design for the Cultural Commons

A method and manifesto for societal change

Prologue
TD Book – Prologue

Intro: what is TD?
TD Book – Chapter 1 – Transition

What is the Cultural Commons?

Theory

Short Overview – The TD Framework

TD Chapter – Theories of Change

TD Chapter – Mindset & Posture

TD Chapter – Visions for Transition

TD Chapter – New Ways of Engaging

TD case studies & stories

Short Recap – The TD Framework – plural verse

chapter – What are Wicked Problems? or maybe another on

Practice

Short Overview – The TD Approach – The 5 Questions

1. How is the problem manifesting in the present & who does it affect?

2. How did the problem arise and evolve to become wicked over many years or decades?

3. How can people co-create visions of the long-term futures they want?

Framework

A. Theories of Change

B. Mindset & Posture

C. New Ways of Engaging

D. Visions for Transition

Approach

1. How is the problem manifesting in the present & who does it affect?

2. How did the problem arise and evolve to become wicked over many years or decades?

3. How can people co-create visions of the long-term futures they want?

4. How can we design for a decades-long transition toward the desired future?

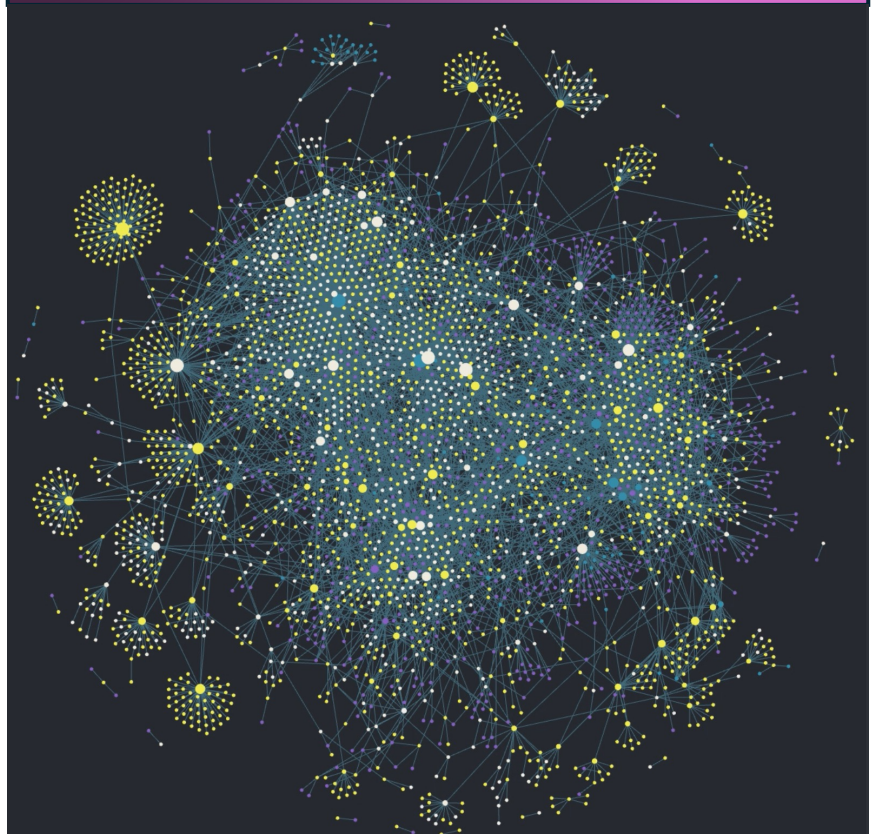
5. How can we develop systemic solutions to this systems problem?

canvas

Inputs

- Presentations
- Conversations
- Readings
- Podcasts
- Emails

Knowledge Ecosystem



Assembling Colliding Unifying

Outputs

- Meeting Prep
- Email Drafts
- Articles
- Presentations
- Proposals
- Decisions
- Opinions
- Feedback
- Projects
- Experiments

Blending of engineering processes & an ecosystem – but not just Obsidian

Inputs → **Knowledge Ecosystem** → **Outputs**

- Presentations
- Conversations
- Readings
- Podcasts
- Emails

- Meeting Prep
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- Articles
- Presentations
- Proposals
- Decisions
- Opinions
- Feedback
- Projects
- Experiments

a constellation of integrated tools

Cameron Bishop
Computer Engineering
Queen's University

AI-powered Search Tools

Phind.png

phind

Phind

Phind

A search-engine AI, much like Perplexity. There is the Phind Model, or the GPT-4 powered Phind Pro. There is also a VSCode extension!

perplexity.png

perplexity

Perplexity

Perplexity

A tool for AI-powered research and discovery.
This tool has moved me away from traditional search engines, such as Google.

Citations

Reference Management

Zotero.png

Zotero

Zotero

A FOSS reference management software to manage bibliographic data and related research materials. This tool is at the core of my note-taking and annotating process for academic works.

Academic works

Read-it-Later

Omnivore...

Omnivore

Omnivore

A FOSS "read-it-later" solution, with the goal of simplifying reading on the internet. Save interesting articles, newsletter subscriptions, and read them later -- focused and
It also allows for the easy addition
/highs, and the ability to organize

Sparks, notes, logs

Plugins, sparks, notes

Plugin, sparks, notes

PKM

Obsidian.png

Efforts, tasks

Output: Code and Experiments

Code and Experiments

Software in Python

Experimental Results

Output: Talks & Presentations

Talks & Presentations

Scripts, Rough Drafts, Notes

Final Presentation in PowerPoint, Beamer, Marp, Advanced Slides

Output: Papers and Thesis

Notes, Manuscripts, and Rough Drafts

Final draft in LaTeX

Papers and Thesis

Task and Time Management

Super Pro...

Super Productivity

Super Productivity

Sophie Valastro
Music Pedagogy & Divinity
University of New South Wales
Sydney Missionary & Bible College

Input

Academic Articles

Capture with Zotero Web Connector, download PDF, then read, highlight and annotate file saved in Zotero.

Import into Zotero for reading where possible. If not, make notes in Zotero notes about key ideas/quotes.

Zotero

- Import Data for referencing, plus data on how I accessed it.
- Use as reference tool for all bibliographies.
- Extract Highlights/Annotations from PDF into a note
- Write separate notes about methodologies and the significance of the resource for my work.

Re-reading and making notes on old Obsidian notes/MOCS/Literature notes generates new ideas, helps me clarify my thinking.

Manually Run Zotero Integrator plug in to bring in key articles/references for current projects or personal interest topics. This makes a Literature Note (according to a template) in Obsidian, with bibliographic data, notes, highlights, and links to relevant ideas. I find it quite interesting to read through these at a later date, though currently have too much data coming across

Medium Articles

Non-fiction works and academic books

General interest articles

Highlight interesting points / good quotes

Readwise (Reader)

PKM

Obsidian

Good quotes

Informative Podcasts

A bright idea

jot down a note in daily note, or a new note, linked to something.

Automatically syncs

Snipd

Listen to podcasts using via Snipd.
I 'snip' (aka highlight) interesting points that I want to revisit later. If I snip a podcast, I also get an AI generated transcript and summary. I mainly care about the transcript, as I prefer to summarise in my own words and highlight why it was significant to me.

I only snip if I want to come back to this, as I don't want to make too much clutter in PKM.

Readwise

Automatically syncs to Obsidian using Readwise Plug, using a template designed by me.
These notes are useful to keep track of what I'm reading, and references to non-academic sources. I would have it on manual import, but want to reduce friction to further developing notes I've made from podcasts

Literature notes

These have been imported from Zotero (manually) or Readwise (automatically) from articles/books/podcasts. Linked to topics, projects, single notes. Currently I use @citekey as their title or alias, so that its easy to reference inline.

Key ideas from a book might form their own note, which can then be linked to multiple things.

Notes

- Some are merely a quote with my comments, others are a partly formed idea.

I also use Obsidian to make notes sich as diary entries, log books, daily notes, weekly reviews, develop songs and compositions, and much more!

MOCs (Map of Content)

- single topic, linking multiple ideas. When academic, usually with references of some sort.

Meeting notes

Daily Note

- Primarily a journal for processing feelings, practicing gratitude, recordings prayers. I also log "sparks", what I'm reading, and track habits.

Sometimes I write these by hand, and then copy and paste over using Tiny Scanner

Asana

- Work projects
- To-do lists

Reclaim calendar/Planner

- I sync asana tasks to reclaim and it comes up with a time block suggestion for me.
- I also use reclaim to log work on particular projects. While my paper planner has the PLAN, inspired by Reclaim's time block suggestions, the calendar in Reclaim shows me what I DID.

Physical Bullet Journal

- Daily priorities, time blocking, interstitial logging.
- Tracking hours worked, deep work.

Weekly/Monthly/Annual Reflection Note

Output

Academic Work

(essay, article, thesis, etc).

- I currently write a rough draft in Obsidian, then switch to Microsoft Word and write a higher quality work from scratch, while looking at my Obsidian MOC, because in Word, I can reference with the footnote referencing my college requires. If I didn't need that, I might write everything in Obsidian or Scrivener.
- Edit (using Grammarly)
- Reference (using Zotero in Microsoft Word).
- Once finished, I then export a PDF and have the finished product linked to the project MOC in Obsidian for future reference.

Song

Sermon

Journal Entry

Collaborative Knowledge Management

🧩 **Defining Problems:** Refining interdisciplinary questions to focus efforts effectively.

🌍 **Exploring Fields:** Discovering, navigating, and synthesizing methods and insights across domains.

🗣️ **Language Barriers:** Bridging gaps in terminology, concepts, and perspectives across disciplines.

🔗 **Disconnected Workflows:** Integrating fragmented tools and workflows.

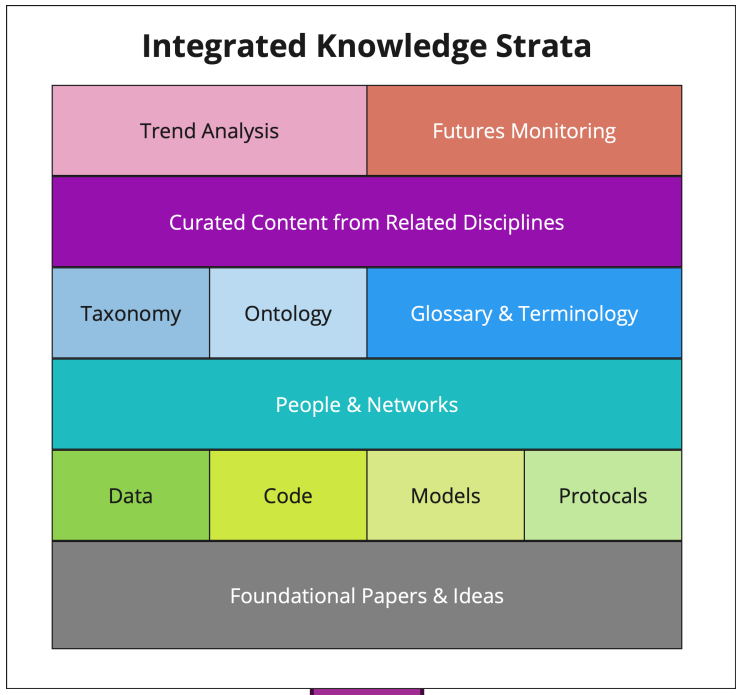
📚 **Updating Knowledge:** Keeping literature reviews consistent and up-to-date.

🏗️ **Sustaining Knowledge:** Building systems to preserve and grow lab knowledge over time.

Knowledge Layers

Integrated Knowledge Strata

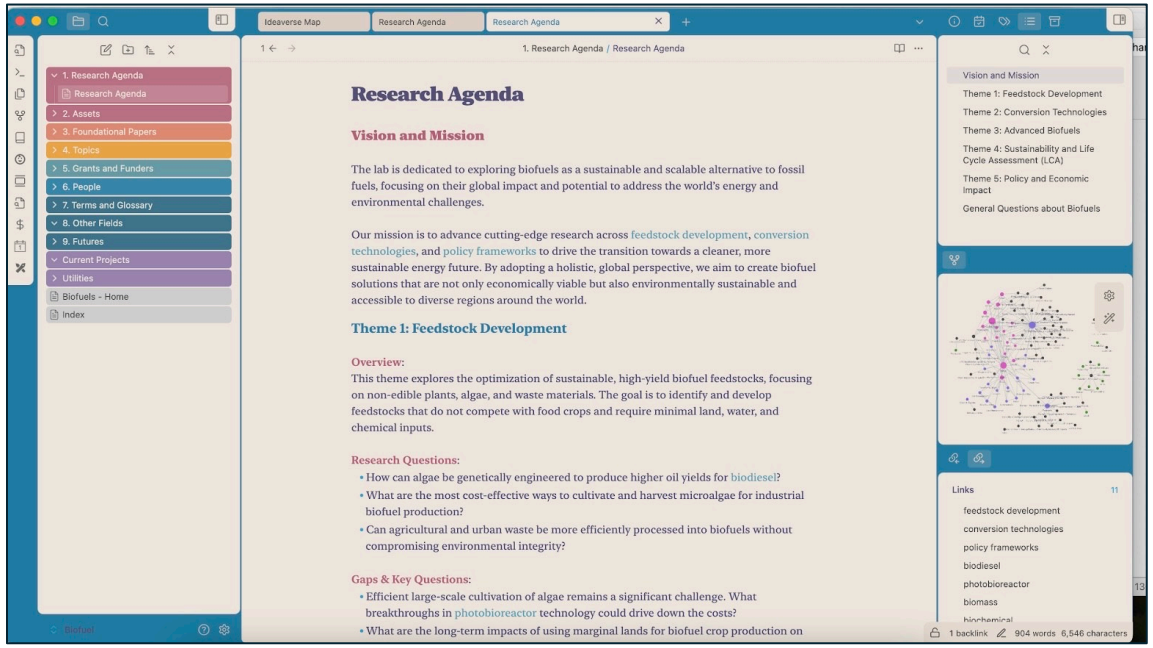
Trend Analysis		Futures Monitoring	
Curated Content from Related Disciplines			
Taxonomy	Ontology	Glossary & Terminology	
People & Networks			
Data	Code	Models	Protocals
Foundational Papers & Ideas			



Presented at a Team Science Conference

OBSIDIAN

- Develop a prototype
- Is it useful?
- What resonates?
- What's missing?
- What new ideas does it spark?



Biofuels - Home

Welcome to the Biofuels Lab. 🌱

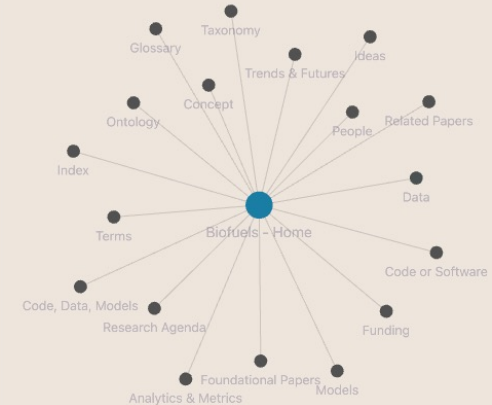
This platform is designed to centralize, organize, and share critical information to support our research planning and development. The following sections provide access to key resources that enhance collaboration, drive ideas forward, and keep our team aligned.

Research Agenda

A clear outline of our lab's priorities, ongoing projects, and strategic goals for advancing biofuel research.

Foundational Papers

A collection of essential readings that provide the core scientific foundation for our research efforts.



Research Agenda

Biofuels - Home

Lab Vision and Mission

The lab is dedicated to exploring biofuels as a sustainable and scalable alternative to fossil fuels, focusing on their global impact and potential to address the world's energy and environmental challenges.

Our mission is to advance cutting-edge research acrossfeedstock development, conversion technologies, and policy frameworks to drive the transition towards a cleaner, more sustainable energy future. By adopting a holistic, global perspective, we aim to create biofuel solutions that are not only economically viable but also environmentally sustainable and accessible to diverse regions around the world.

Theme 1: Feedstock Development

Theme 2: Conversion Technologies

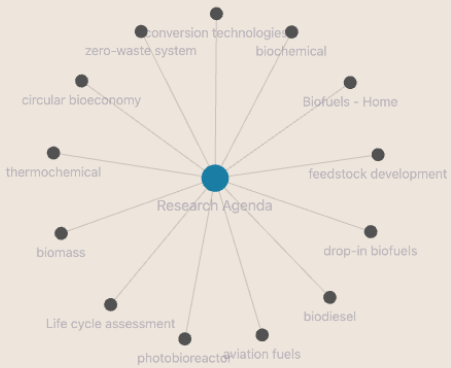
Theme 3: Advanced Biofuels

Theme 4: Sustainability and Life Cycle Assessment (LCA)

Theme 5: Policy and Economic Impact

General Questions about Biofuels

terms	1
advanced-biofuels	3
research_paper	3
policy	4
sustainability	4
feedstock	6
conversion	7
review_paper	7
LCA	8
foundational	10
people	31
term	54



Theme 2: Conversion Technologies

Overview:
This research area focuses on the processes used to convert biomass into biofuels, including both biochemical (e.g., fermentation) and thermochemical (e.g., gasification) methods. The aim is to increase the efficiency and scalability of these technologies.

Research Questions:

- How can enzymatic hydrolysis be optimized to convert lignocellulosic biomass into ethanol more efficiently?
- What are the comparative advantages of pyrolysis versus gasification in converting algae into biofuels?
- Can microbial fermentation processes be enhanced to reduce by-products and increase biofuel yields?

Gaps & Key Questions:

- Current conversion processes are energy-intensive. How can energy inputs be reduced to make biofuel production carbon-neutral?
- What role can catalyst development play in increasing the efficiency of thermochemical conversion processes?

Data

Biofuels - Home

Overview

The **Data** section outlines critical datasets, including experimental results and real-world observations related to biofuel production and performance. This repository allows for detailed analysis, comparison, and validation, supporting evidence-based insights and informed decision-making in biofuel development.

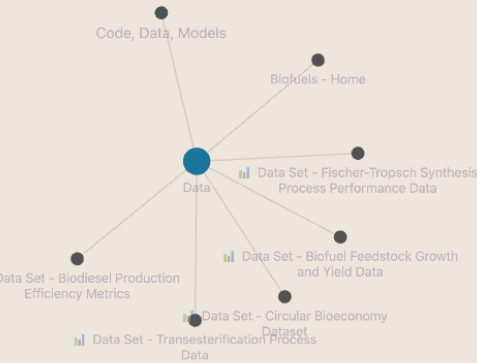
Data sets

📊 Data Set - Circular Bioeconomy Dataset
Abstract: This dataset contains lifecycle analysis (LCA) data for various bio-based production systems within the circular bioeconomy framework. It tracks the environmental impact, resource inputs, and recycling efficiencies for biofuel, bioplastic, and biomaterial processes.

📊 Data Set - Fischer-Tropsch Synthesis Process Performance Data
Abstract: This dataset contains experimental results for the catalytic performance of Fischer-Tropsch synthesis under varying temperature and pressure conditions. It focuses on CO conversion rates, chain growth probability, and catalyst selectivity.

📊 Data Set - Transesterification Process Data
Abstract: This dataset includes reaction rates, conversion efficiency, and by-product formation for biodiesel production through transesterification, using various vegetable oils and catalysts under different temperature conditions.

📊 Data Set - Biofuel Feedstock Growth and Yield Data
Abstract: Comprehensive dataset on the growth rates, biomass yields, and oil content of various biofuel feedstocks, including algae, jatropha, and switchgrass. It tracks growth conditions, soil types, and climate factors.



📊 Data Set - Fischer-Tropsch Synthesis Process Performance Data

Data

Fischer-Tropsch Synthesis (FTS) Data

- **Name:** Fischer-Tropsch synthesis (FTS) process Performance Data
- **Abstract:** This dataset contains experimental results for the catalytic performance of Fischer-Tropsch synthesis under varying temperature and pressure conditions. It focuses on CO conversion rates, chain growth probability, and catalyst selectivity.
- **Keywords:** gas-to-liquid, Catalysis, CO activation, synthetic fuels
- ***Access: Restricted (available upon request)***
- **Version:** 3.1 (Released September 2022)
- **Associated Publications:** Fischer-Tropsch synthesis.pdf
- **License:** Internal use only
- **Collaborators/Creators:** Advanced Fuels Research Group
- **Use Cases/Applications:** Suitable for researchers focused on optimizing FTS catalysts and improving fuel yield.
- **Data Size:** 120 MB (Excel format)
- **Related Resources:** FTS catalyst simulation models

Trends & Futures

Biofuels - Home

Overview

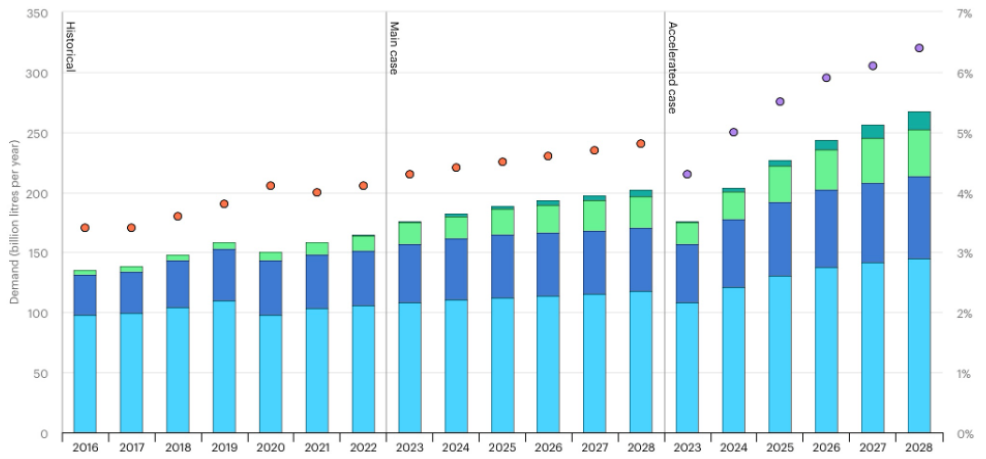
Scenarios

Biofuel Futures - Navigating Tech Innovation and Policy
Biofuel Futures - Navigating Market Demand and Environmental Pressure

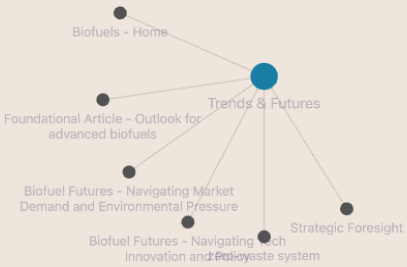
Strategic factors

Trends & Projections

Global biofuel demand, 2016-2028



terms 1
advanced-biofuels 3
research_paper 3
policy 4
sustainability 4
feedstock 6
conversion 7
review_paper 7
LCA 8
foundational 10
people 31
term 54



Technical Definition:

Transesterification is a chemical reaction where an ester is transformed into a different ester by exchanging the organic group (alkyl group) attached to the oxygen atom with an alcohol. This process usually involves the use of a catalyst, such as an acid or a base, to speed up the reaction. It is commonly used in the production of biodiesel, where vegetable oils or fats (which are triglycerides) react with alcohol (often methanol) to produce fatty acid methyl esters (biodiesel) and glycerol as a byproduct.

Easy to Understand Definition:

Interdisciplinary Definition:

Transesterification is a chemical process where fats or oils are combined with alcohol to create biodiesel and glycerol. This reaction swaps specific components of the molecules, turning natural oils into renewable energy. It involves concepts from chemistry, environmental science, and engineering. In biodiesel production, this process offers a sustainable alternative to fossil fuels, supporting energy transitions and climate adaptation strategies. The process is also relevant in industries such as pharmaceuticals and cosmetics, where glycerol is used in everyday products like soaps and lotions. This definition highlights the relevance of the concept across different fields, including renewable energy, environmental policy, and industrial applications.

Connection to Biofuel:

Transesterification is the key chemical reaction in the production of biodiesel, a renewable biofuel made from vegetable oils or animal fats. During this process, the triglycerides in fats and oils are broken down and converted into fatty acid methyl esters (biodiesel) and glycerol. This reaction allows natural oils to be transformed into a usable fuel that can replace or supplement traditional fossil fuels in diesel engines. The process is crucial for creating biodiesel, which burns cleaner and reduces greenhouse gas emissions compared to conventional diesel, making it a sustainable alternative that supports energy transition efforts and reduces environmental impact.

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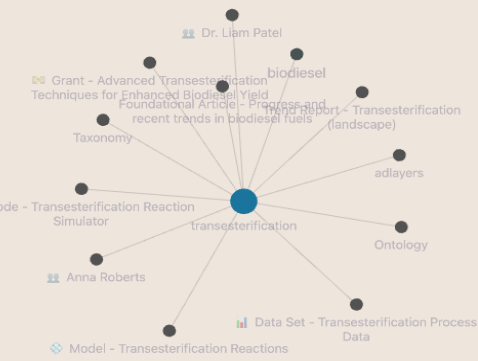

Ontology

Biofuels - Home

Overview

Ontology Example:

- Biofuel:
  - Produced from → Biomass:
    - Derived from → Corn, Microalgae, Low-input biomass
  - Created by → Processes:
    - Fermentation → Ethanol
    - Transesterification → Biodiesel
    - Gasification → Syngas
    - Fischer-Tropsch synthesis (FTS) process→ Liquid biofuels
  - Affects → greenhouse gas emissions
  - Is influenced by → Carbon-neutral technologies, Sustainable energy
- Agriculture:
  - Impacts → land use change
  - Contributes to → feedstock development and food vs. fuel debate
  - Supports → Bioenergy production
- Climate Science:
  - Focuses on → Greenhouse gas emissions, Carbon sequestration
  - Relates to → Sustainable energy and Circular bioeconomy

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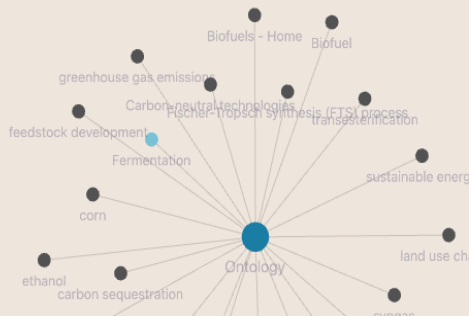

1. Research Agenda
2. Foundational Papers
3. Related Papers
4. Code, Data, Models
5. People
6. Analytics & Metrics
7. Grants
8. Terminology
Dictionary
Glossary
Ontology
Taxonomy
Terms
9. Trends & Futures
Utilities
Biofuels - Home

- ⌨️ Code - Biodiesel Plant Efficiency Optimizer
- ⌨️ Code - Transesterification Reaction Simulator
- 👥 Anna Roberts
- 👥 Dr. Liam Patel
- 💠 Model - Biodiesel Production Efficiency
- 💵 Grant - Advanced Transesterification Techniques for Enhanced Biodiesel Yield
- 📊 Data Set - Biodiesel Production Efficiency Metrics
- 📊 Data Set - Transesterification Process Data
- 📡 Dr. Aisha Malik - radar
- adlayers
- Biofuel Futures - Navigating Tech Innovation and Policy
- Foundational Article - Biodiesel from microalgae
- Foundational Article - Environmental, economic, and energetic costs and benefits of biodiesel and ethanol biofuels
- Foundational Article - Outlook for advanced biofuels
- Foundational Article - Progress and recent trends in biodiesel fuels
- Ontology
- Research Agenda
- Taxonomy
- Trend Report - Transesterification (landscape)

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- Dr. Aisha Malik - radar

```dataview
list from "" where contains(file.outlinks, [[biodiesel]]) sort file.name asc
```

- Foundational Article - Outlook for advanced biofuels
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Collaborative Knowledge Management

Discovery & Visualization

Citation Management

Knowledge Management

Writing

Presentations & Design

Collaborative Knowledge Management

Moving from ad hoc to intentionality..

integrated + flexible + adaptive architecture

Litmaps

Discovery & Visualization

Zotero

Citation Management

OBSIDIAN

Knowledge Management

Overleaf

Writing

Figma

Presentations & Design

GitHub

Code

Airtable

Tasks & Projects

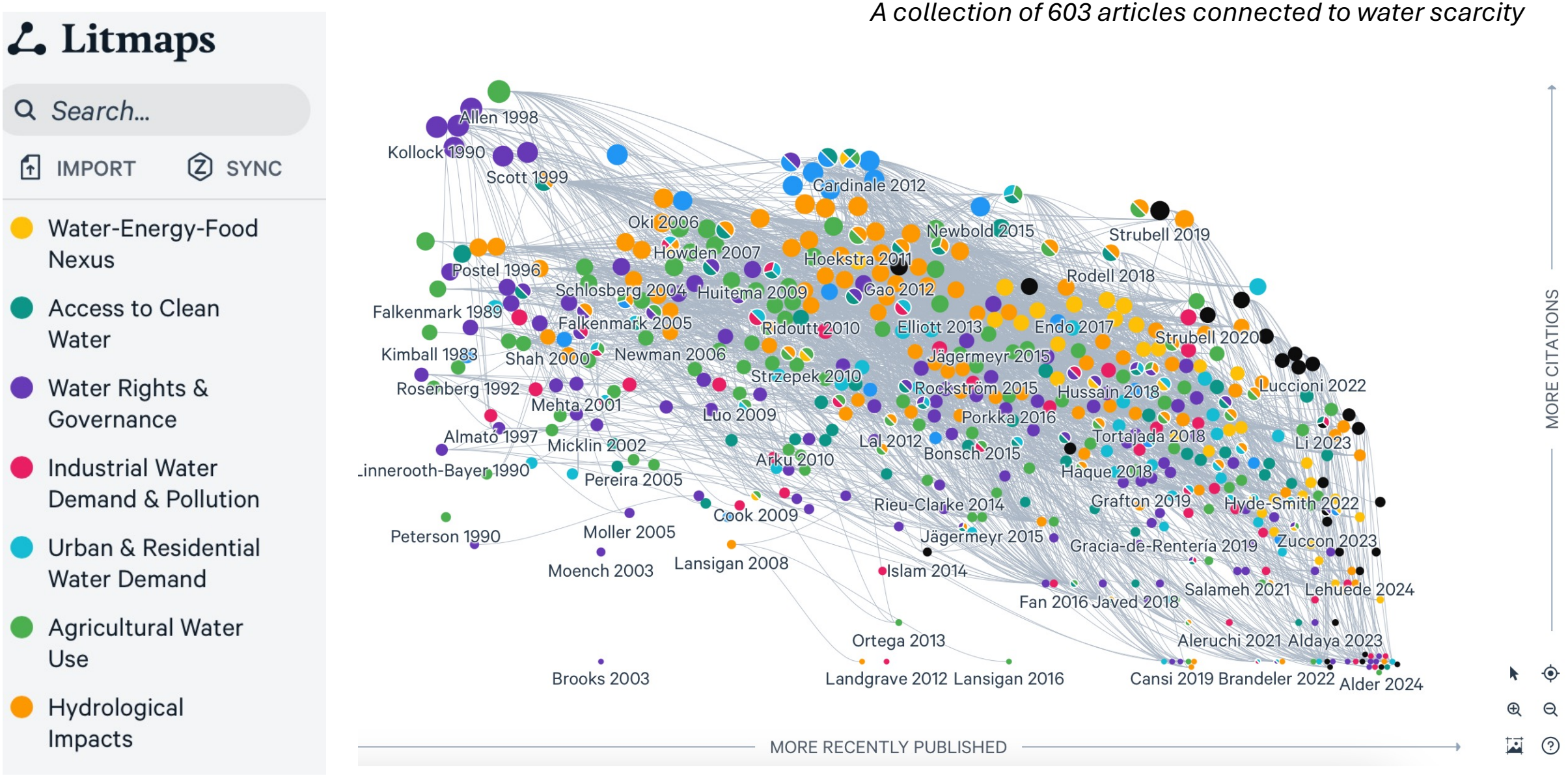
31 Calendar

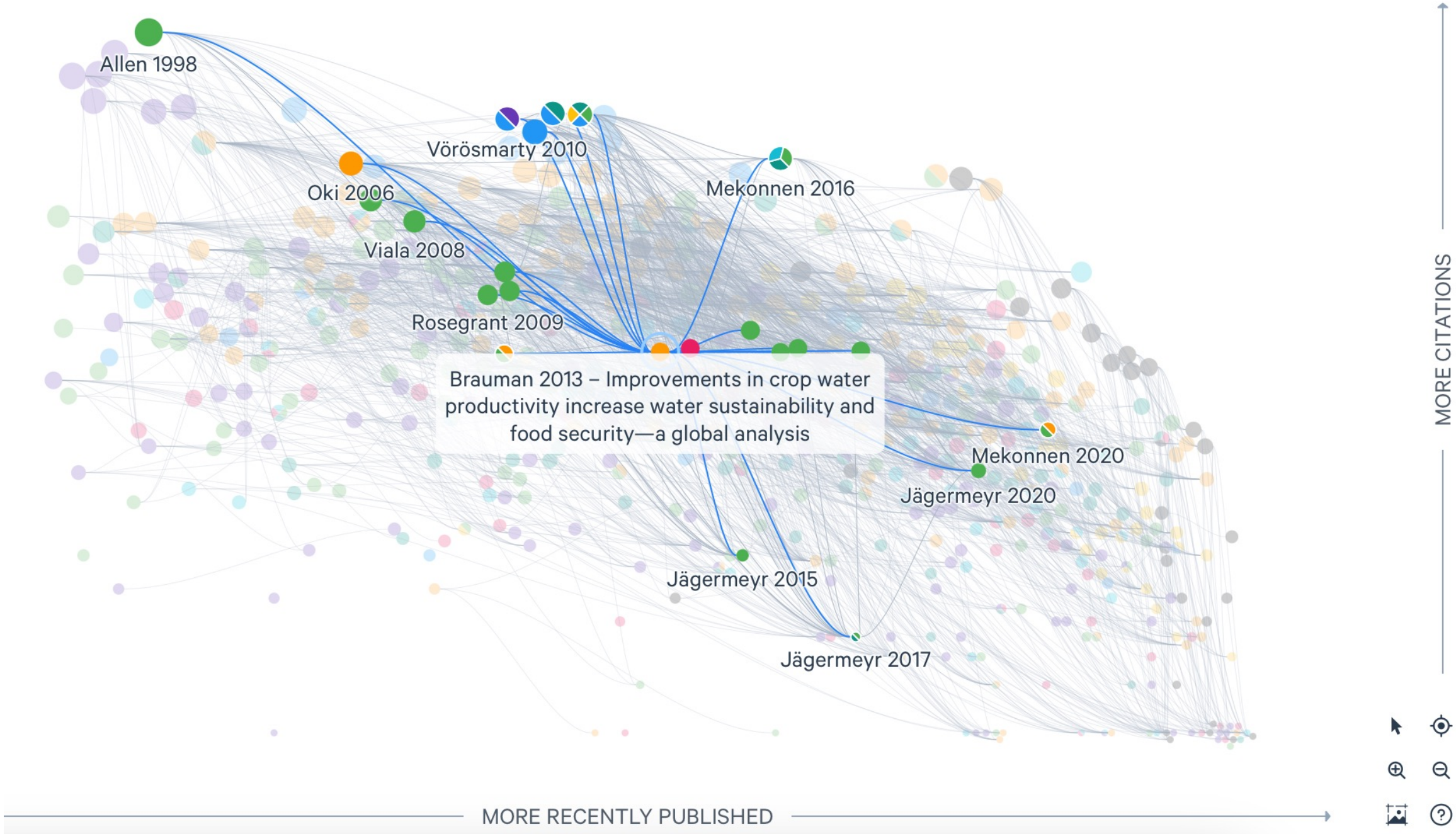
Scheduling

slack

Team Communication

A collection of 603 articles connected to water scarcity

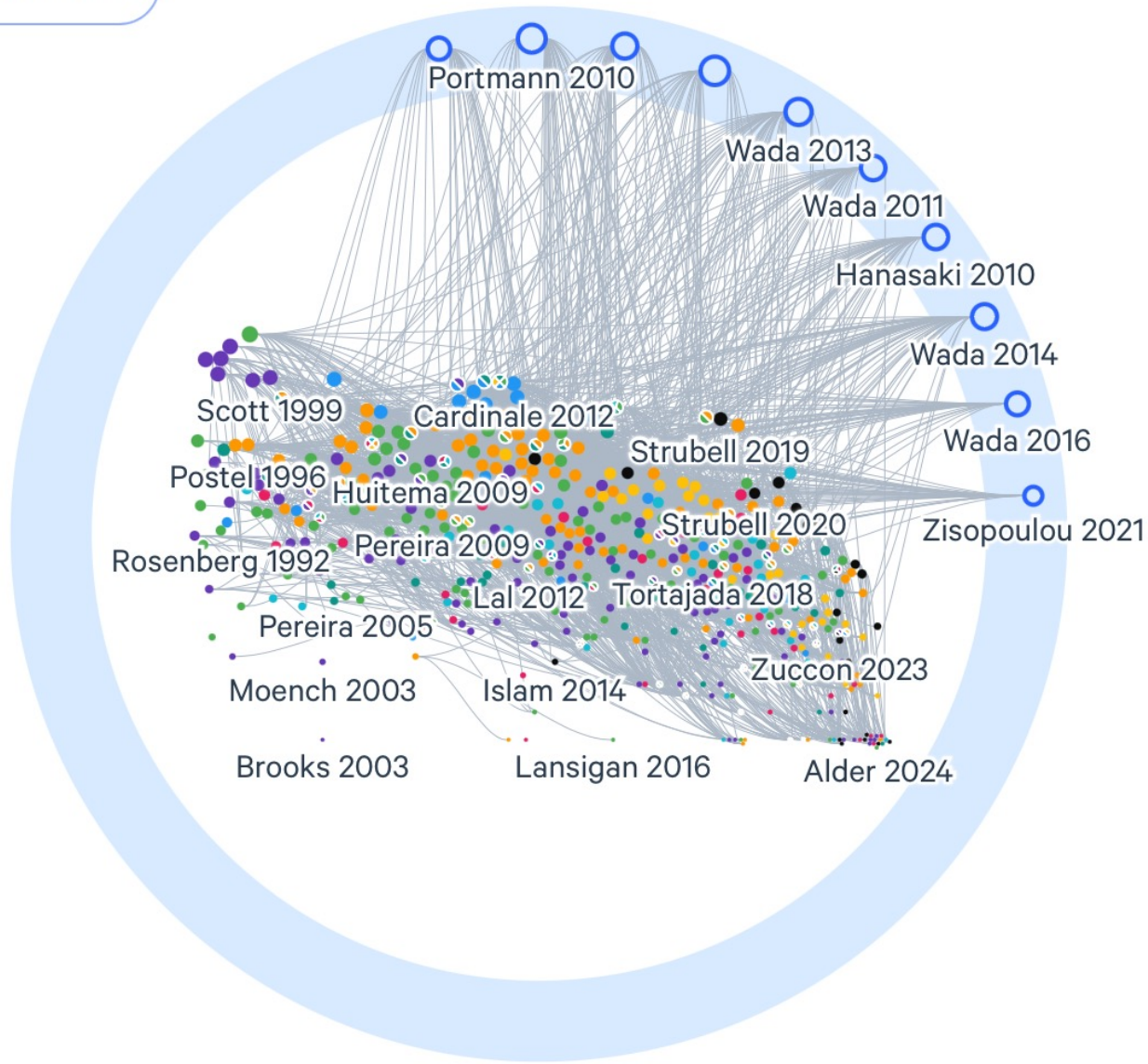


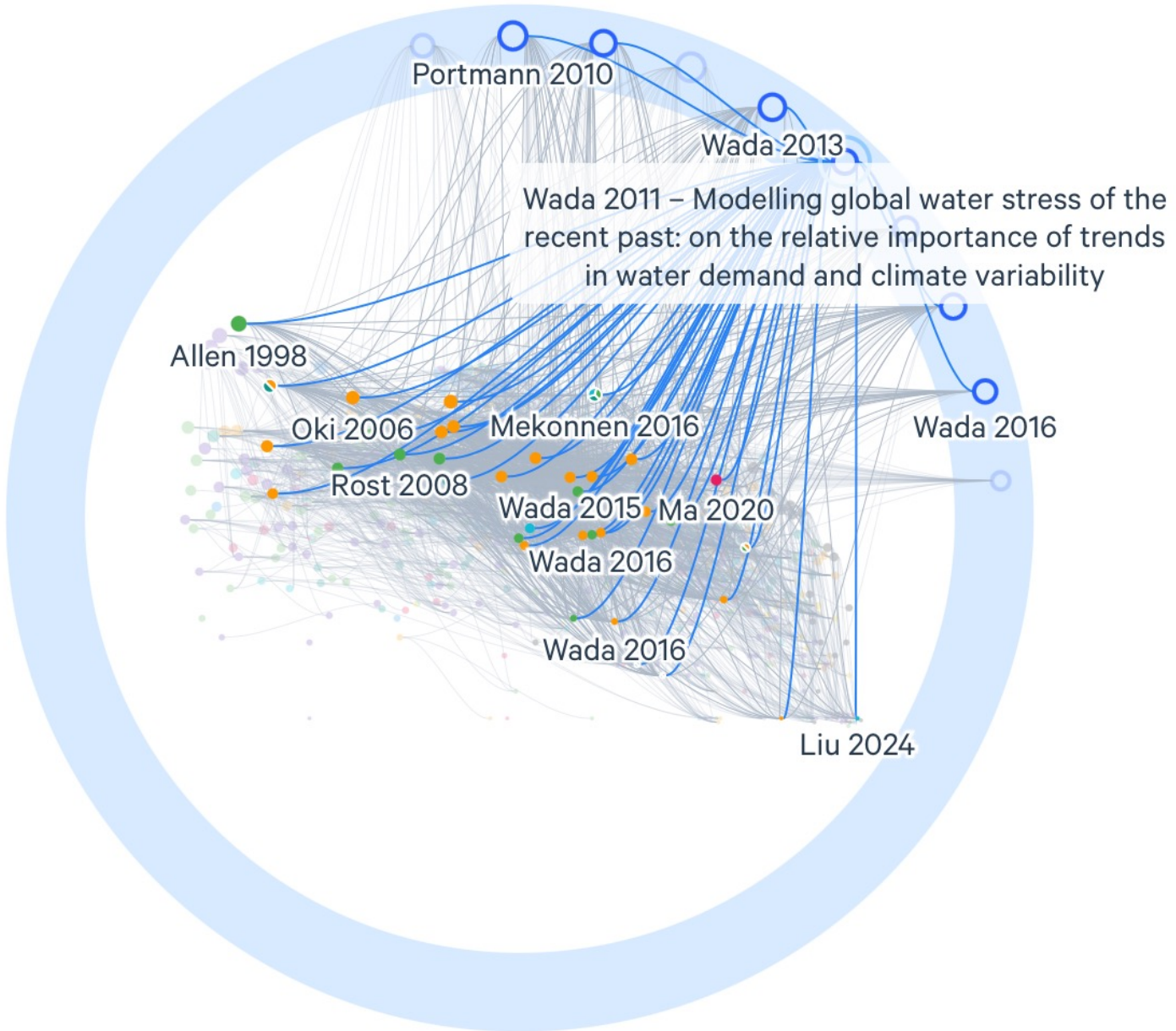

Allen 1998
Vörösmarty 2010
Oki 2006
Mekonnen 2016
Viala 2008
Rosegrant 2009
Brauman 2013 – Improvements in crop water productivity increase water sustainability and food security—a global analysis
Mekonnen 2020
Jägermeyr 2020
Jägermeyr 2015
Jägermeyr 2017
MORE CITATIONS
MORE RECENTLY PUBLISHED

Explore Related Articles

*Filter by **Date**, **Keyword**, **Journal**, and more...*

How are these results calculated?





(603 articles)

Explore Related Articles
Automated citation and reference search →

Monitoring Enabled
You'll receive emails for new relevant publications

Find...

Layout Settings

Vertical Axis

Cite Count

Articles with a high citation count generally have had a more significant impact on their field.

Ref Count

Articles with particularly high reference counts are likely to be Review Articles.

Publication Date

Recent articles are generally more accurate than old articles

Momentum

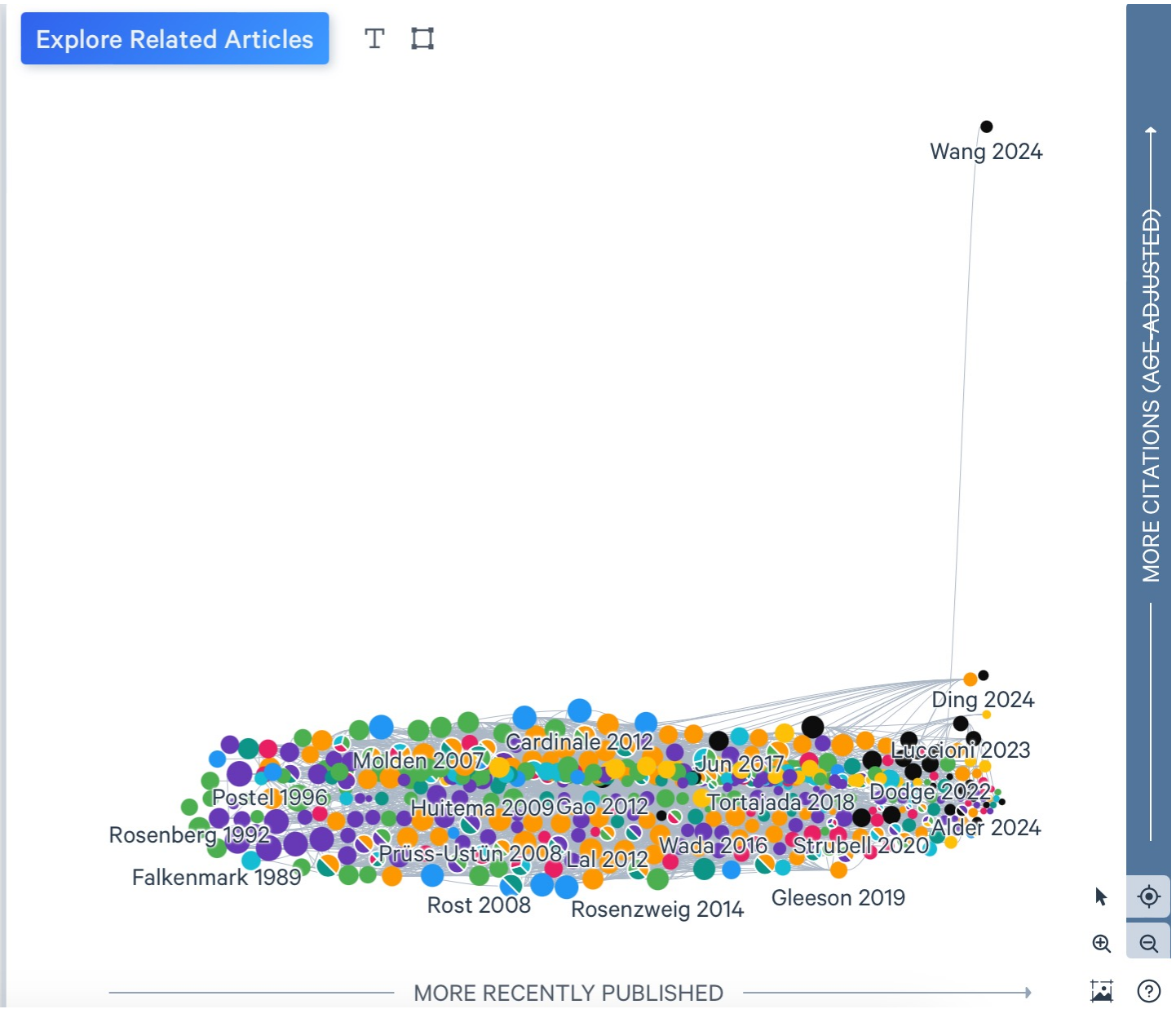
This helps identify impactful younger articles which may still be accruing citations.

How does "Momentum" work?

Bias

Map Connectivity

This highlights which articles are the most topically relevant.



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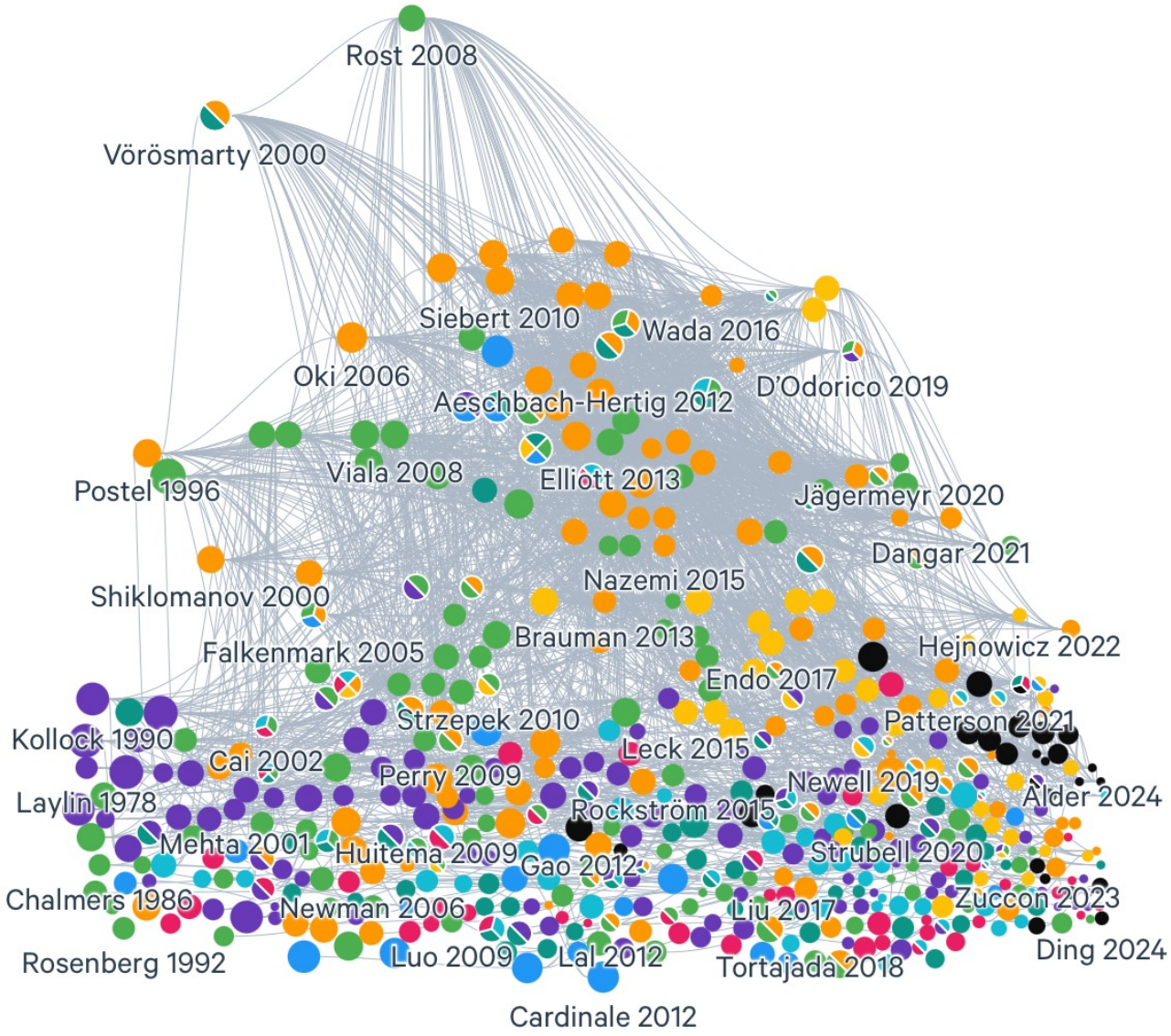
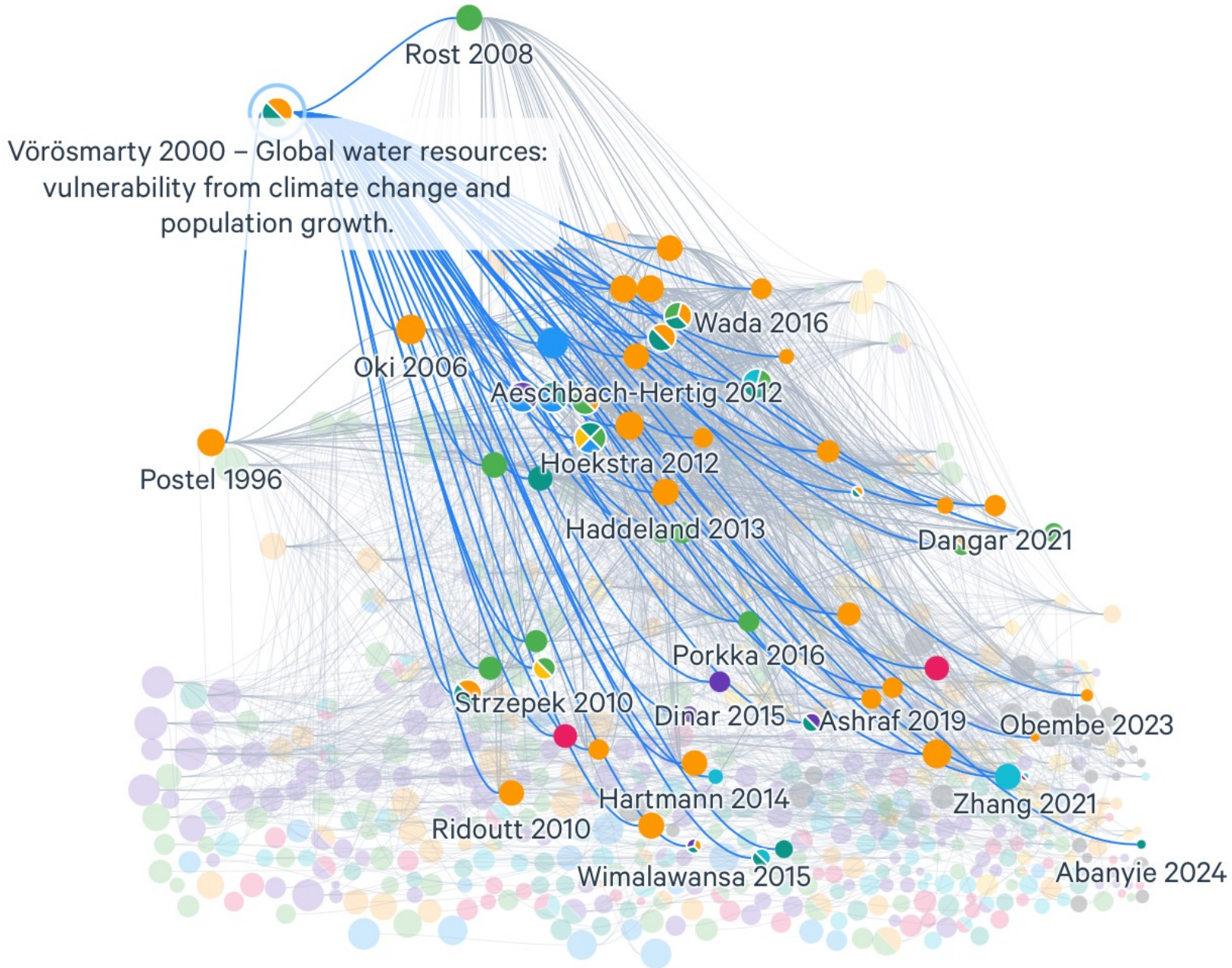


Litmaps

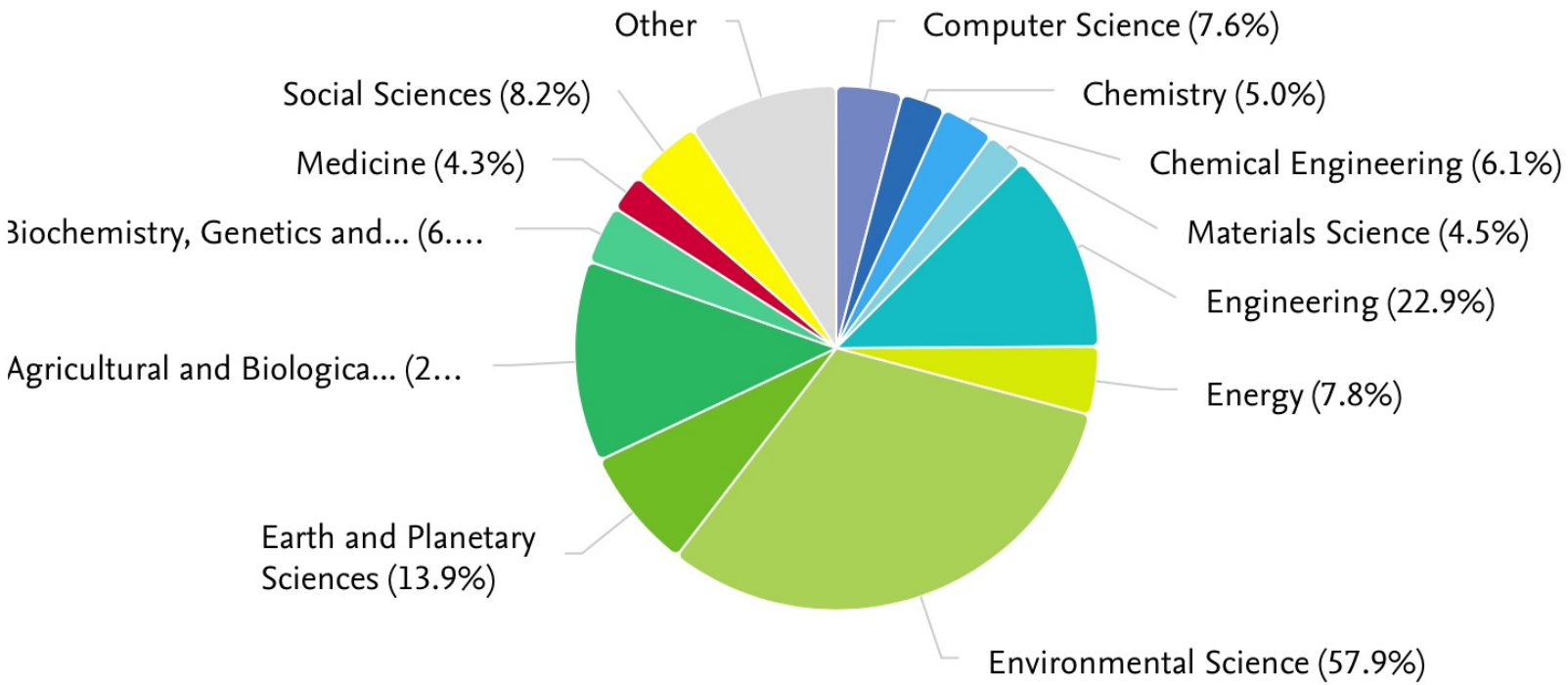
Search...

IMPORT SYNC

- Water-Energy-Food Nexus
- Access to Clean Water
- Water Rights & Governance
- Industrial Water Demand & Pollution
- Urban & Residential Water Demand
- Agricultural Water Use
- Hydrological Impacts



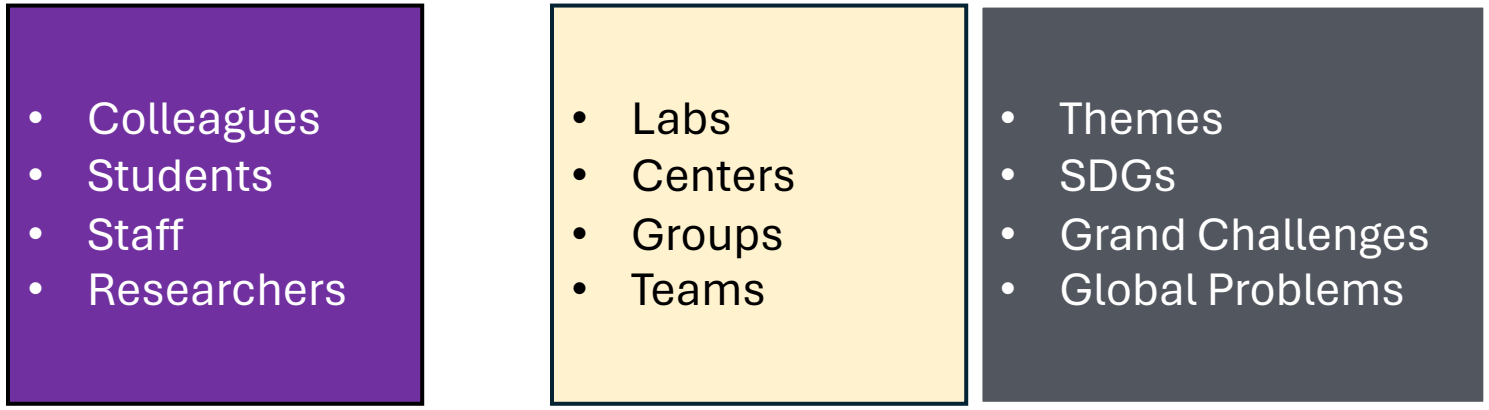
Water Pollution



- Atmospheric Sciences
- Climatology
- Computer Science and Data Analytics
- Disaster Risk Management
- Earth System Science
- Ecology
- Economics
- Engineering
- Environmental Science
- Geography
- Geology
- Geophysics
- Glaciology
- Hydrology
- Oceanography
- Public Policy
- Remote Sensing and Geoinformatics
- Renewable Energy
- Sociology

Knowledge Management Ecosystems

as-a-service?

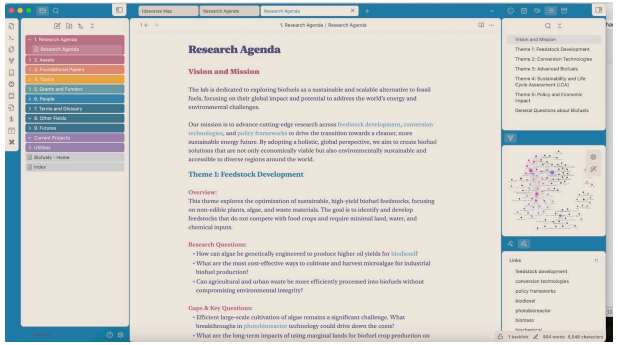


Helping people organize, connect, and activate the information, workflows, and priorities that matter most to them.

Next Steps?

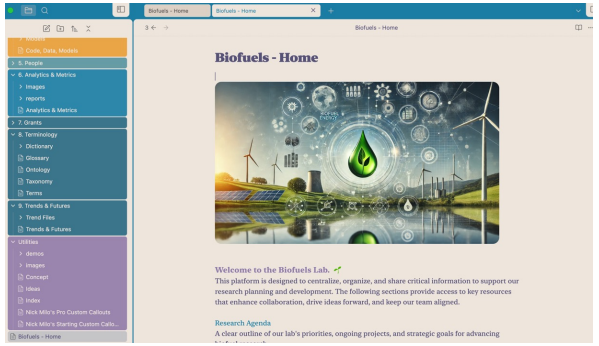
Spring 2025

Test the prototype



Summer 2025

Incorporate feedback, documentation, youtube



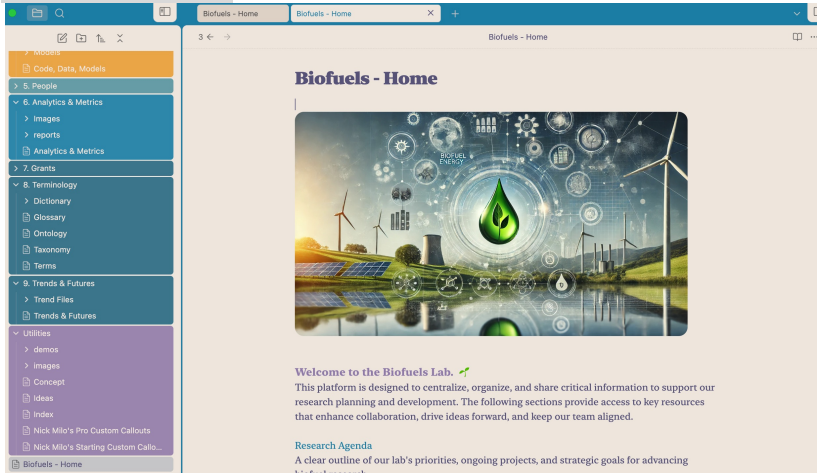
Sharing again at Team Science conference in July

(late) **Fall 2025**

Template 1.0 Released

Whether people use my template or not, I see it as a starting point. My goal is to spark thoughtful consideration of information practices.

Template



I'm using this...

Knowledge Ecosystem

Litmaps

Google Drive

Calendar

Gmail

Zotero

OBSIDIAN

ChatGPT

Trello

Readwise

todoist

To talk with people this.

(and then figure out
a scalable service model)

Knowledge as an Ecosystem

It thrives when it's nurtured—
growing, evolving, and creating new possibilities.

Knowledge as a Mirror

How we organize our information
reveals the patterns in how we think.

Knowledge in Context

Layering and connecting information
reveals hidden insights.

Knowledge & Action

The practices & systems we create
shape the actions we can take.

What if...
we approach note-taking
with intention and creativity?

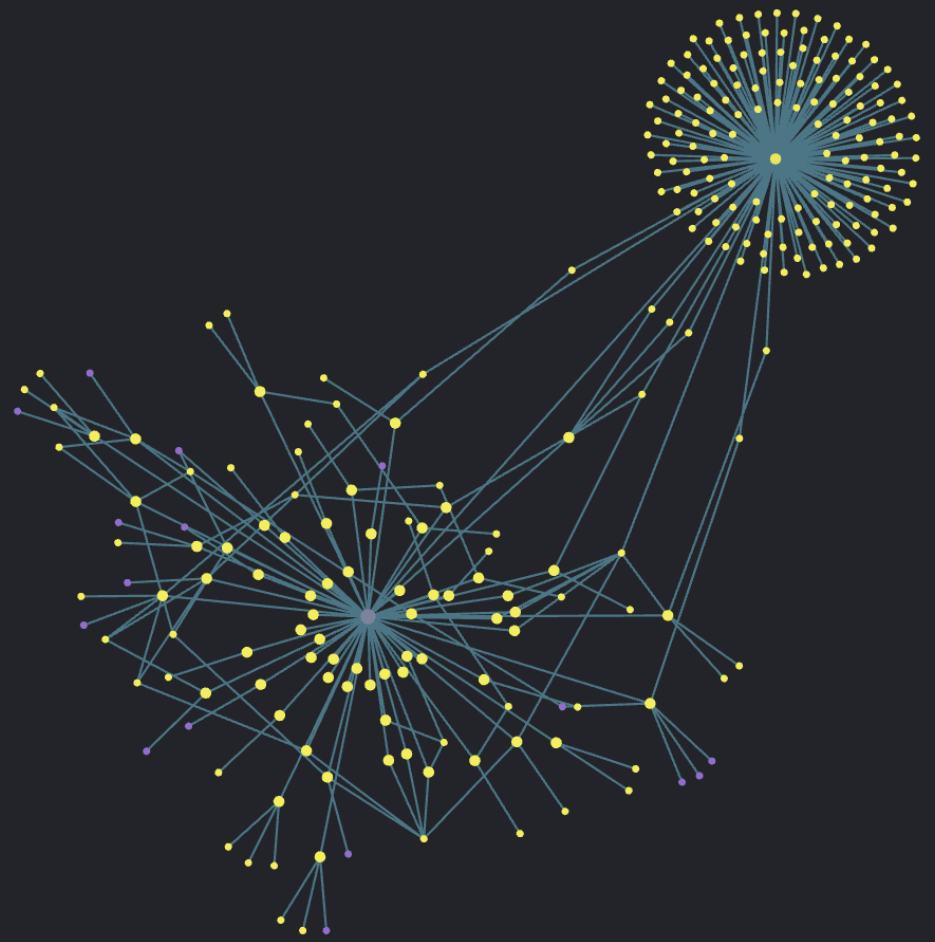
Not just tasks to complete
but as pathways to possibilities.

What if...
we are not just managing information
but designing it to nurture potential?

What happens...
when we allow our notes and ideas to
accrue, collide, and evolve together?

Personal & Collaborative Knowledge Management Systems

Infrastructure for Idea Management & Research Development



www.brianmathews.io