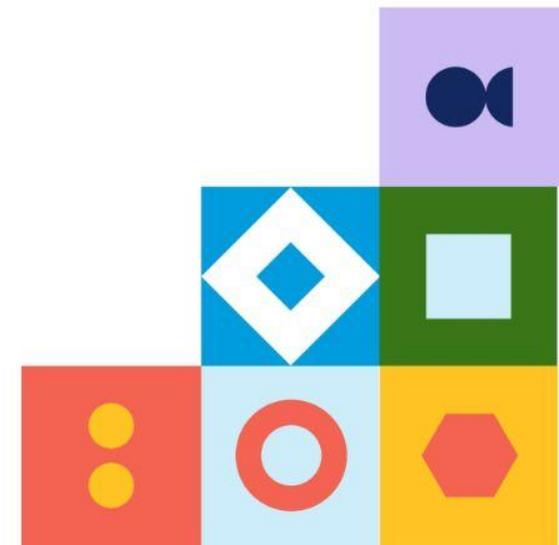


Designing for Depth

Information Architecture Strategies in Large Drupal Sites



Anne Lentino
Sr. Product Owner
Sandstorm Design



Fun facts about Sandstorm®



Accessibility-certified, creative technology agency for 25+ years for **purpose-driven brands**

Deep expertise with **Associations, Global Non-Profits, Higher Ed & Healthcare**



Certifications: CPACC (accessibility), AWS Cloud, Pantheon, Acquia, Drupal, DEIB, and WBENC (women-owned)

15+ yrs working **in Drupal**

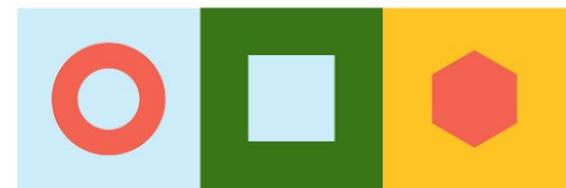
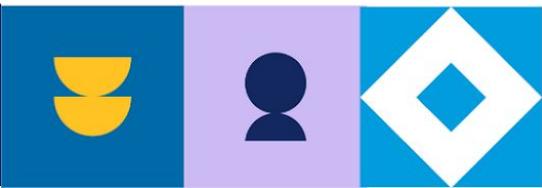


Interdisciplinary team: UX, UI, AI, strategy, technology, analytics

UX practice started by **Ph.D in human factors** in 2006

Today We'll Cover

- Project snapshots
- How user research drove content strategy
- Information architecture as a foundation for good user experience
- Using Drupal's strengths to manage a complex site architecture



OUR PARTNERSHIP WITH THE MILKEN INSTITUTE

Milken Institute is a **global nonprofit, economic think-tank** offering a complex mix of **services, partnership opportunities, and exclusive events** across three unique pillars.



sandstorm®

A close-up photograph of a pink axolotl, a type of aquatic salamander, swimming in clear water. The axolotl's body is a pale pink color, and it has prominent, feathery external gills on its head and neck. Its eyes are small and dark. The background is a soft, out-of-focus light blue and white, suggesting an underwater environment.

OUR PARTNERSHIP WITH THE MARINE BIOLOGICAL
LABORATORY

The Marine Biological Laboratory
(MBL) is a **nonprofit research and
education institution** advancing
biological discovery to better
understand **life, the environment,
and human health.**

RESEARCH

Tell Us How You Really Feel



Who We Talked To



Project Sponsors



Content Editors



Stakeholders



End Users



Everyone Relies on Search!



But if the experience is inconsistent, and important functionality like **filters are hidden**, users **quickly lose trust**.

183 results for:  [HIDE ADVANCED FILTERS](#)

Sort by: Results per page:

[APPLY FILTERS](#) [Reset Advanced Filters](#)

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Navigation Leaves Something to be Desired

When users go to
Google or **bookmarks**
before your nav or site
search...

it's time for a change!



let me **Google** that for you

Google Search

I'm Feeling Lucky

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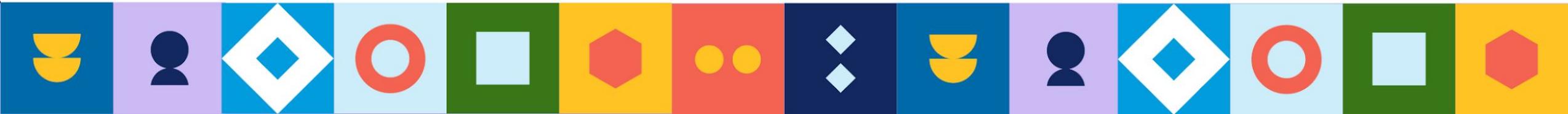


Don't Leave Me Stranded

Users are used to finding content organized by topic.

Related content is a must — if they want more, let them have it!

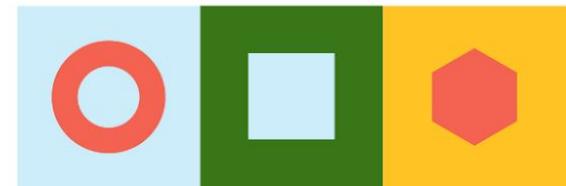
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The Good News?

**There's a
taxonomy
for that!**

- Robust faceted search
- Sophisticated architecture strategy
- Strategic placement of “Featured” content or tags
- No dead ends





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Chicago 2026

INFORMATION ARCHITECTURE

Measure Twice (Migrate Once)



Using “Yes, And”



Our new sitemaps needed to:

- Reflect **user-confirmed priorities**
- Highlight the organization’s **focus areas** (and everything under them)
- Create a **hub for published content**

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Audit and Inventory



We documented it all:

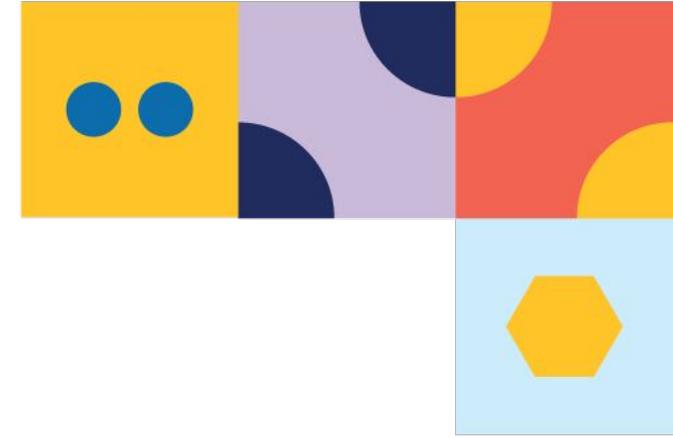
- Current state sitemap
- Content types
- Taxonomies
- Paragraphs
- Media types

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Gave It a New Home

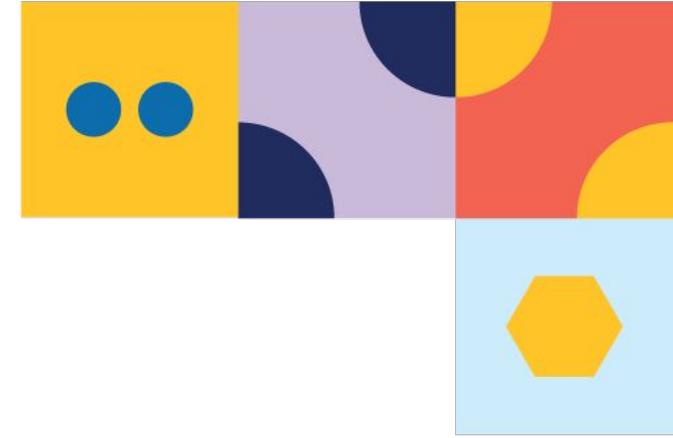
- Elevated the valuable content
- Gave major focus areas their due
- Kept a tidy utility nav



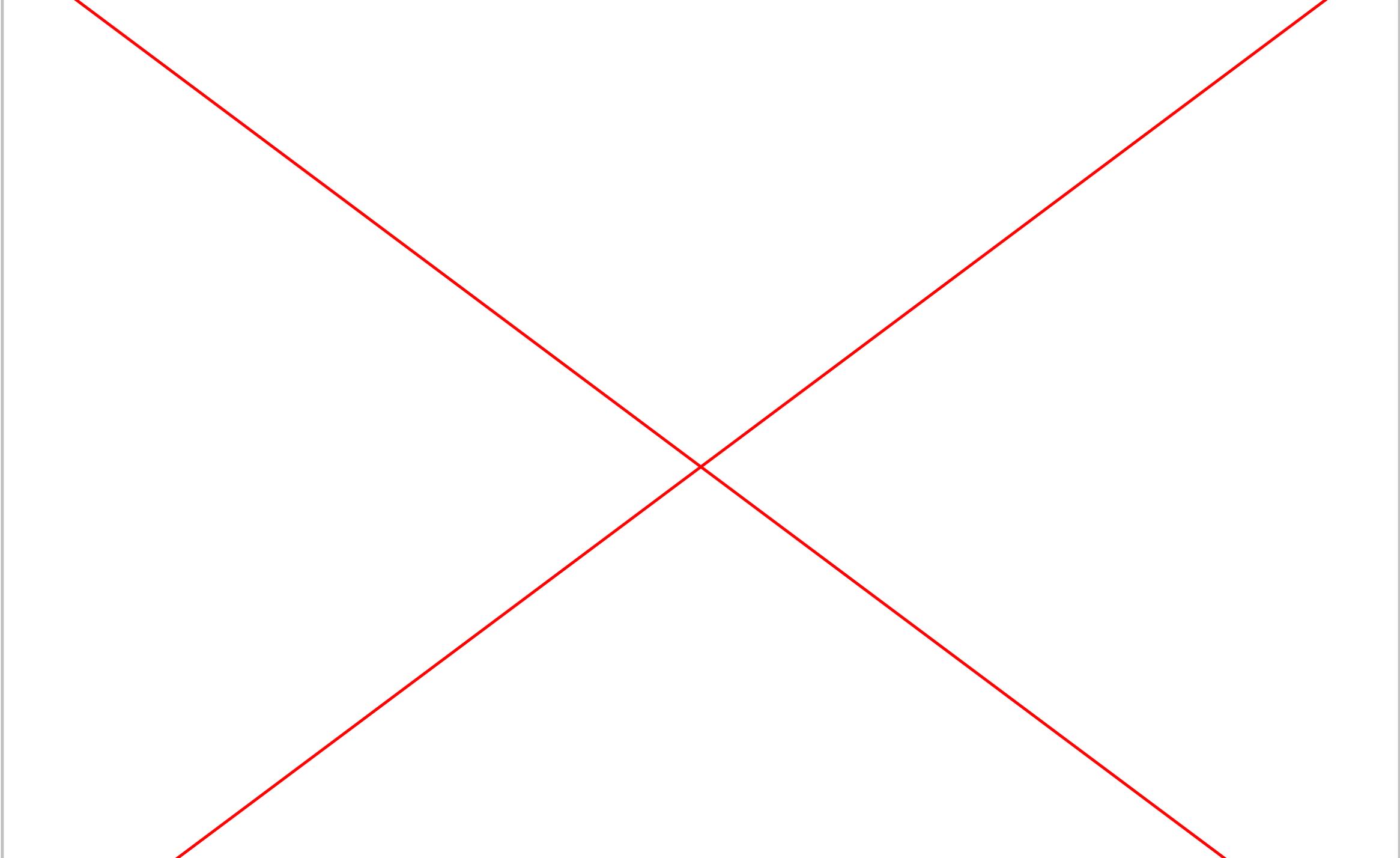
And a Fresh Coat of Paint

To mega menu, or not to mega menu?

- Evaluate content breadth & depth
- Reduce overwhelm
- Offer a path backward







Big discoveries
often start with
small ideas—and
flexible funding.
Your gift fuels
research at MBL.

Support Research @ MBL

 DONATE TODAY

 READ ABOUT OUR RESEARCH

MIGRATION + TRANSFORMATION

Make the Magic Happen



Guiding Principles

1/
Keep what can
be repurposed

2/
Be selective
with new
content types

3/
Be kind to your
content admins





DrupalCon
Chicago 2026
23-26 March



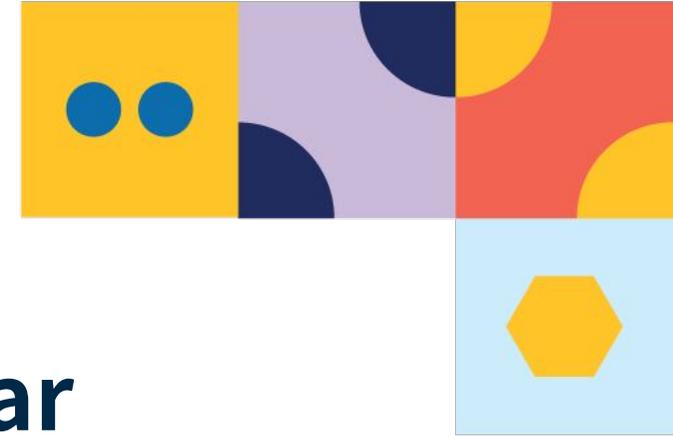
1

Taxonomy Strategy



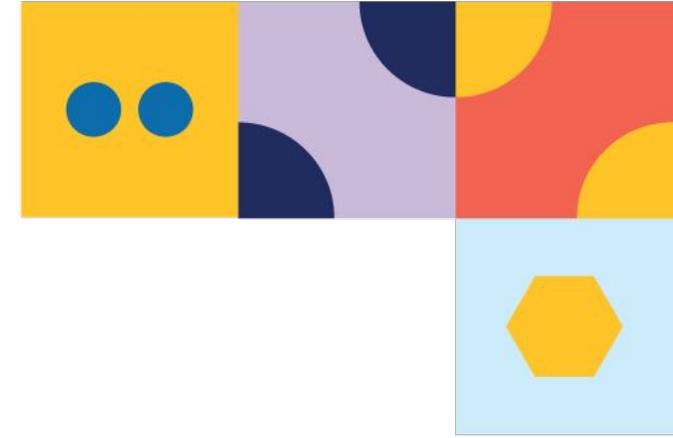
Taxonomies can become overwhelming and duplicative

- Round up **similar vocabularies**
- **Consolidate:** remove duplicates, remove vague terms
- Transform: Update terms for accuracy, **nest**



Need an Arbitrator? **AI to the Rescue!**

- Begin with cleaned-up list
- Compare with high-priority SEO keywords
- Use AI to refine



The Result



Condensed 17 vocabularies (11 unused) to 6.

Nesting vocabularies allowed us to accommodate volume AND specificity. And set the groundwork for our related content needs.





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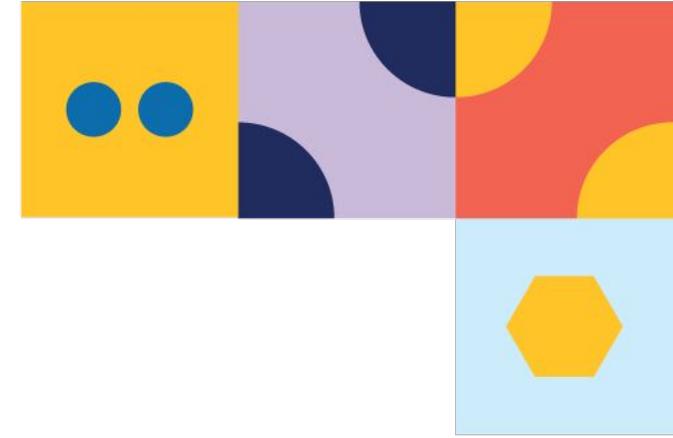
2

Architecture Considerations



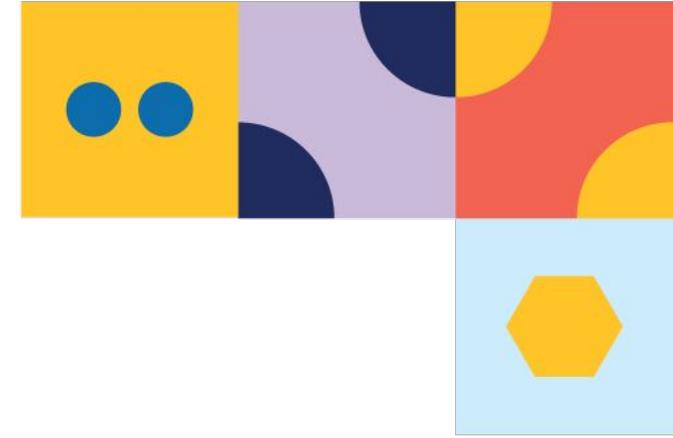
Consider the **Content Types**

- **Reuse** where possible
- **Transform** where applicable
- **Migrate** when needed

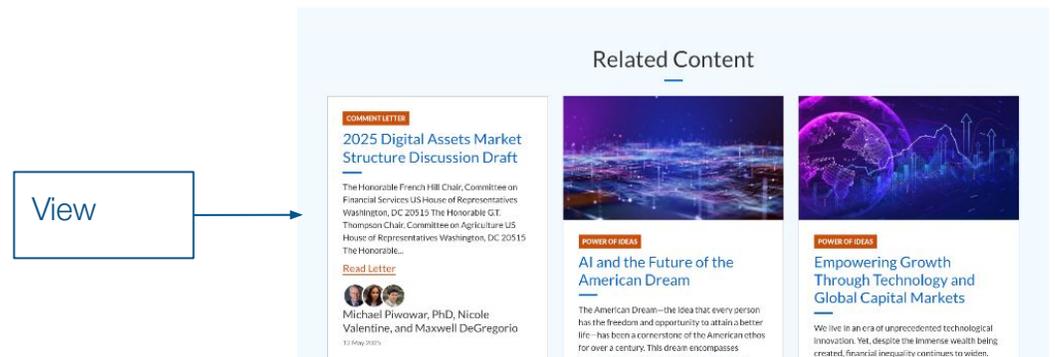
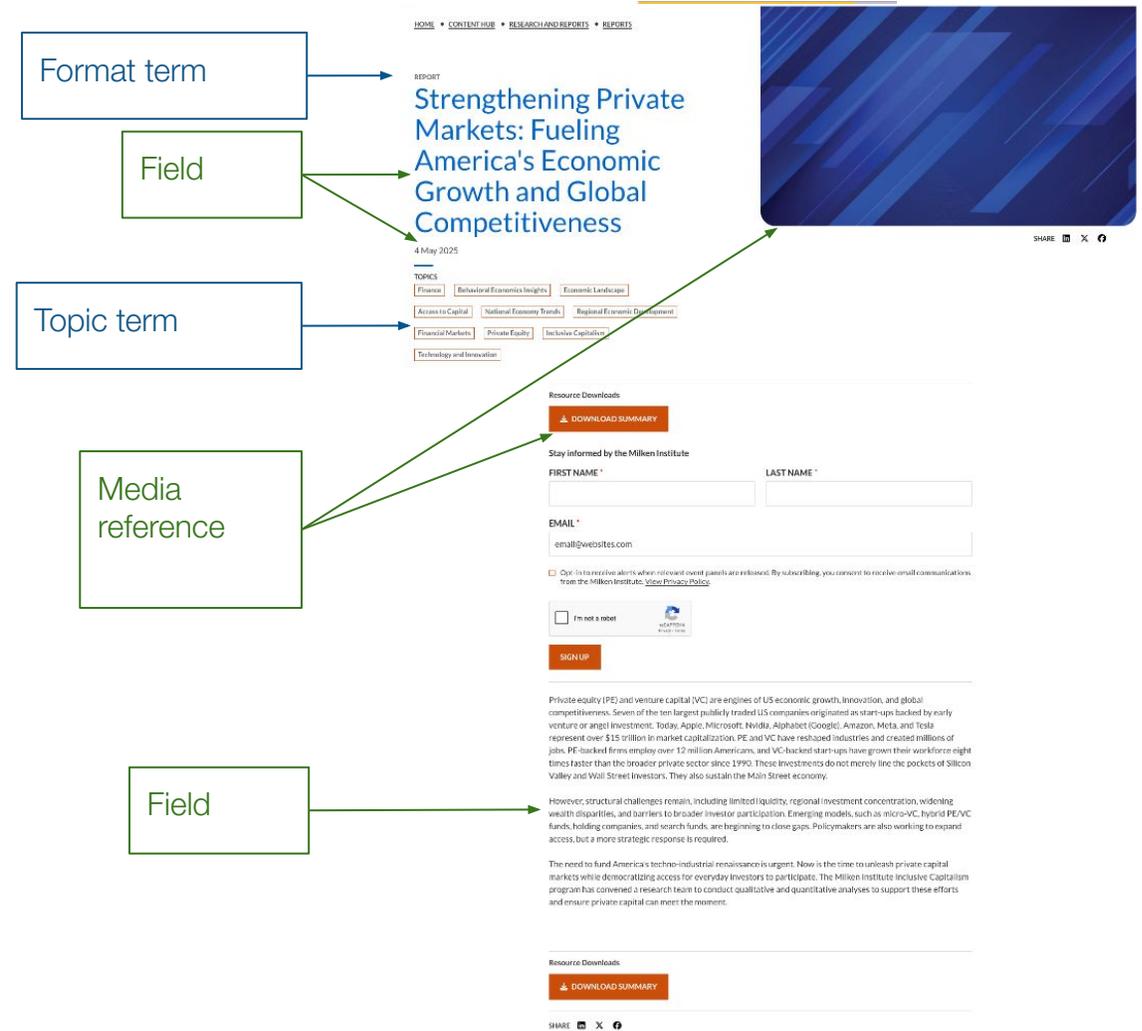


Use **Structured Content** as the Workhorse

- 1 content type for 1,000s of (similar) nodes
- **Taxonomy-driven** everything
- Let the **fields** be the **outline** for editors



Give Editors a Map (Article)



Give Editors a Map (Person)

FACULTY DIRECTORY

- Overview
- Research Centers
- Faculty Directory**
- Withdrawing
- Researchers and Support Staff
- Strategic Initiatives
- Research Organizations
- MBL Chicago PhD Graduate Program
- Scientific Publications
- Who is at the MBL
- MBL MBL.org
- Resources & Research Facilities
- Research Administration
- MBL Tool box
- Research Registration Forms
- Funding Opportunities
- Health & Safety

Zoe Cardon Senior Scientist



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 CV: [Cardon_CV_2024.pdf \(PDF\)](#)
 ORCID ID: [0000-0001-8725-7642](https://orcid.org/0000-0001-8725-7642)

Education
 Ph.D., Biological Sciences, Stanford University, 1994
 B.S. Biology, B.A. Spanish, Utah State University, 1988

MBL Affiliation
 Ecosystems Center

Research Area
 Ecosystems
 Global Change
 Limnology
 Microbiomes

Lab Website
[Cardon.Lab](#)

Zoe Cardon is a Senior Scientist in The Ecosystems Center at the MBL. As an ecosystems ecologist with roots in mechanistic plant physiology, she explores how plants contribute to ecosystem function both above- and belowground, particularly in partnership with microbes and soils in the "rhizosphere." Dr. Cardon received her PhD from Stanford University, was a DOE Global Change Distinguished Postdoctoral Fellow at UC Berkeley, and after a short stint as Assistant Professor at Bowdoin College, she became Assistant then Associate Professor in the Ecology and Evolutionary Biology Dept. at University of Connecticut. At UConn, she was a founding member, Associate Director, and Graduate Program Director of the interdisciplinary, cross-departmental Center for Integrative Geosciences. In 2002-2003, she was named Sarah Blaffer Hays Fellow in Conservation Biology at Harvard. Cardon's work is interdisciplinary and collaborative, and since arriving at MBL in 2008, she contributed to the launch of the National Microbiome Initiative by the White House OSTP, served as an elected member of the Governing Board of the Ecological Society of America (ESA), and she was named a Fellow of ESA in 2018 and a Fellow of the American Association for the Advancement of Science (AAAS) in 2021.

Links:

[Micro-Eco Discussion Group Schedule](#)

Research Center term

Research Area term

Field

News and Research Highlights



[Effects of Beech Leaf Disease on Falmouth Trees Revealed in MBL Student's Publication](#)
 January 9, 2026



[Plants, Invertebrates, Soil Carbon Shoppers - But They Can Disrupt It, Too!](#)
 University of Louisiana News
 July 17, 2025



[Cardon Leads 58-AM Collaborative Project on Marsh Responses to Tidal Oscillations](#)
 March 6, 2024

View

Zoe Cardon works with



[Anne Giblin](#)
 Senior Scientist and Director, The Ecosystems Center



[Joseph Vallino](#)
 Senior Scientist Ecosystems Center



[Blair Paul](#)
 Assistant Scientist Bay Paul Center



[Emil Ruff](#)
 Associate Scientist Ecosystems Center

Field



[Marco Kelluweit](#)
 Assistant Professor UMass Amherst



[Carolyn Malmstrom](#)
 Professor Michigan State University



[Magdalena Bezanilla](#)
 Professor Dartmouth College



[William J. Riley](#)
 Senior Scientist Lawrence Berkeley National Laboratory

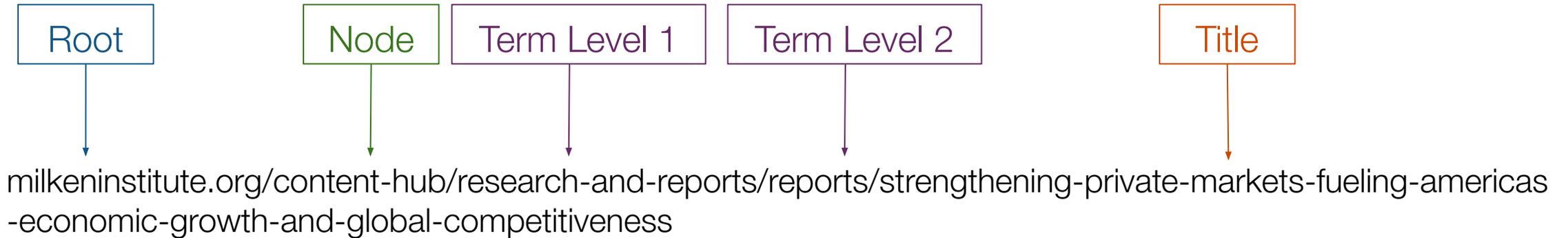
Selected Publications

Garcia Arredondo M., Kew W., Chu F., Jones M., Boileau F., Cardon ZG, Kelluweit M (2024). Differential exudation creates biogeochemically distinct microenvironments during rhizosphere evolution. *Environmental Science and Technology*. 58:18713-18722. <https://doi.org/10.1021/acs.est.4c04108>

Zhou Y., D'Mesra T., Cardon ZG, Wang J., Sulman BN, Giblin A., Forbrich I. (2024) Simulated plant-mediated oxygen input has strong impacts on fine-scale porewater biogeochemistry and weak impacts on integrated methane fluxes in coastal wetlands. *Biogeochemistry* <https://doi.org/10.1007/s10633-024-01155-z>

Field

Leverage Taxonomy for Menus and Aliases



Or Use the Menu to Help Lead the Way

[< Back to Course Offerings](#)

PHYSIOLOGY: MODERN
CELL BIOLOGY USING
MICROSCOPIC,
BIOCHEMICAL AND
COMPUTATIONAL
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Directors: [Cliff Brangwynne](#), Princeton University; and [Amy Gladfelter](#), Duke University

 Financial aid is available



Set a **Default Layout** for Consistency

- **Layout builder blocks** for frequently-updated nodes
- **Reference available terms** to power views

When Those Powers Combine...

Format term

Field

Entity reference (powered by field)

View

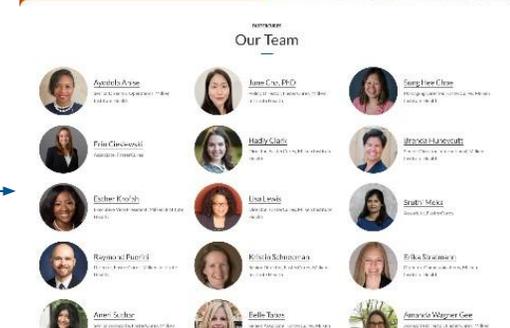
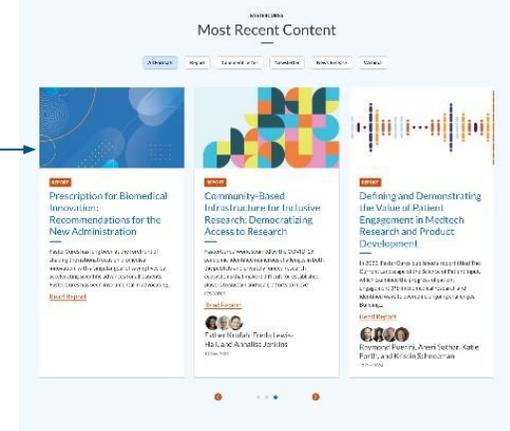
Block

View



Scaling and Sustaining Better Health Outcomes Through Prevention

Entity reference



It All Powers Search

Search

climate measures



Showing 1-10 of 1566 results

SHOW PER PAGE

10

SORT BY

Relevance

Filter

Types

- Collection
- Article
- Government and Policy Engagement
 - Comment Letter
 - Congressional Testimony
 - Letter of Support
 - Policy Brief
 - Statement of Support
- Insights
- Newsletter
 - Article
- News Release

+ VIEW ALL

Experts

Start typing...

Region

- Americas

Climate Resilience Measures

<http://milkeninstitute.org/topics/climate-and-environment/climate-resilience-measures>

13 Jan 2024

... Climate Resilience Measures ... Body We conduct research and promote strategies to ...

Climate and Environment

<http://milkeninstitute.org/topics/climate-and-environment>

13 Jan 2024

... Climate and Environment ... Body We work to develop strategies ... that protect and restore planetary health. Term Climate and Environment Trending No ... Climate and Environment ...

Capital Deployment for Global Climate and Economic Resiliency

<http://milkeninstitute.org/topics/climate-and-environment/capital-deployment-global-climate-and-economic-resiliency>

23 Apr 2025

... Capital Deployment for Global Climate and Economic Resiliency ... Masthead Image ... Impact Body Despite growing urgency, the global climate response remains fragmented, with capital and ...

Faculty Directory

Search or Filter the Directory

Search the Directory

SEARCH

– Or Filter the Directory

Show Resident Faculty only

Show On-Campus Scientists only

By Research Area

Select By Research Area(s) +

By Research Center

Select By Research Center(s) –

By Research System

Select By Research System(s) +

Bay Paul Center

Bell Center

Ecosystems Center

APPLY

...and
Filtering

Takeaways

- **Start with research.** Findings will help ground future decisions.
- Invest time in **auditing and documentation.** It will save time in the long run and help catch some of those tricky edge cases.
- Think of **every page as a side door** to the website.
- Make sure the **content strategy is clear** and the **architecture supports it.**

Thanks for joining!

Let's Connect:

Anne Lentino, Sr. Product Owner

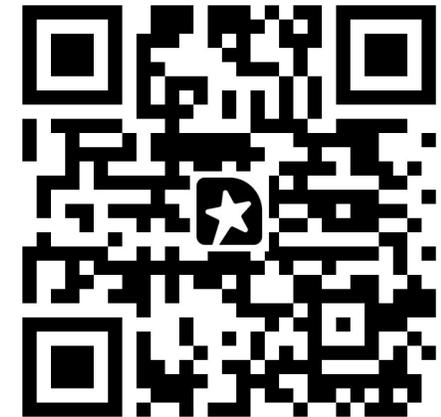
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Sandstorm[®]

sandstormdesign.com

I'd love your
feedback!



Designing for Depth: Information Architecture Strategies in
Large Drupal Sites



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