



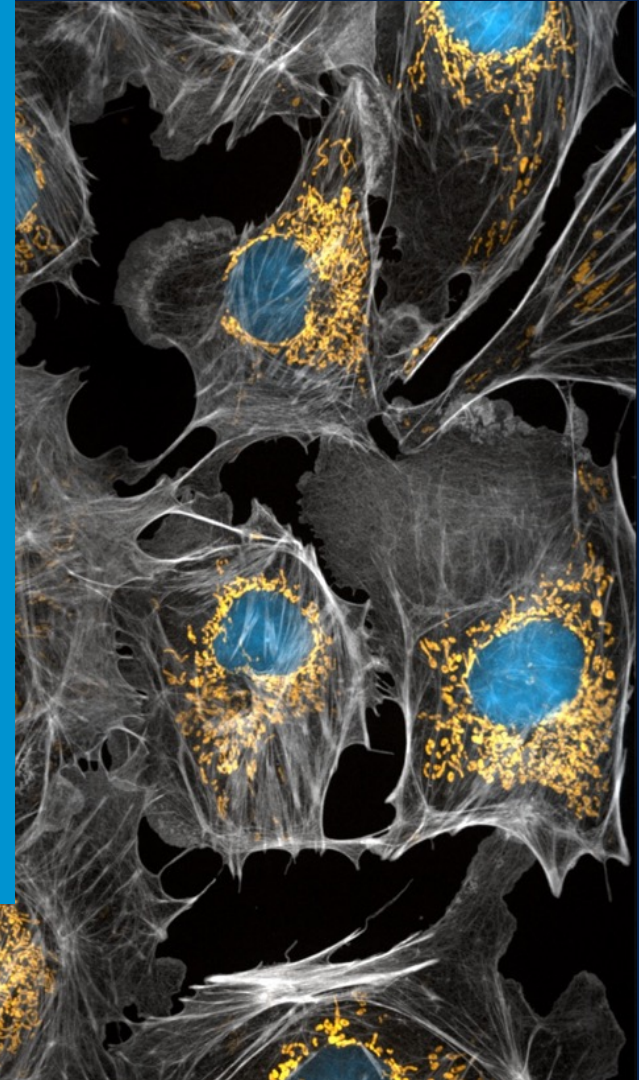
University of California
San Francisco

Pattern Libraries

Leveraging Atomic Design and Pattern Lab to
Develop a Living Visual Style Guide

Jayson Jaynes, ITS Web Services
Web Developer

Mark Miller, IET Professional Services
Web Developer





We're not designing pages, we're designing systems of components.

Stephen Hay

Web Strategist Guru

Why a Pattern Library?

- Quick mockups and iteration
- Working with real code
- Responsive interactions
- Able to isolate components
- Easy updating and extending
- **Documentation and annotation tools**



We Need All the Changes for Everyone



- Leadership wanted to see an inventory of components before we built
- Wanted quick turnaround on design updates
- Concerned about mobile and tablet
- Needed a working example to show partners and stakeholders
- Wanted documentation on design changes and decisions
- Must be compliant and pass accessibility
- Need to share final design with partners' developers

Three-Week Design Challenge



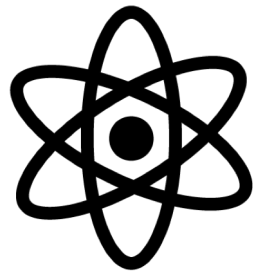
- Redesigning the www.ucdavis.edu website
- Allowed 3 weeks to present a functional site
 - ...but it doesn't work that way!
 - Especially in a complex CMS like Drupal
- We didn't want to take 3 weeks making HTML mockups only to throw that work away later
- We also knew that we would need to brand other sites with the same design

Our Universal Pattern Library Goal



If you're looking to build a fully customized website or application, our easy-to-use Pattern Library will allow you to build a unique look and feel without designing common elements from scratch. Developers across our university can borrow and contribute patterns, making it easier to forge functional, beautiful websites and applications with less effort.

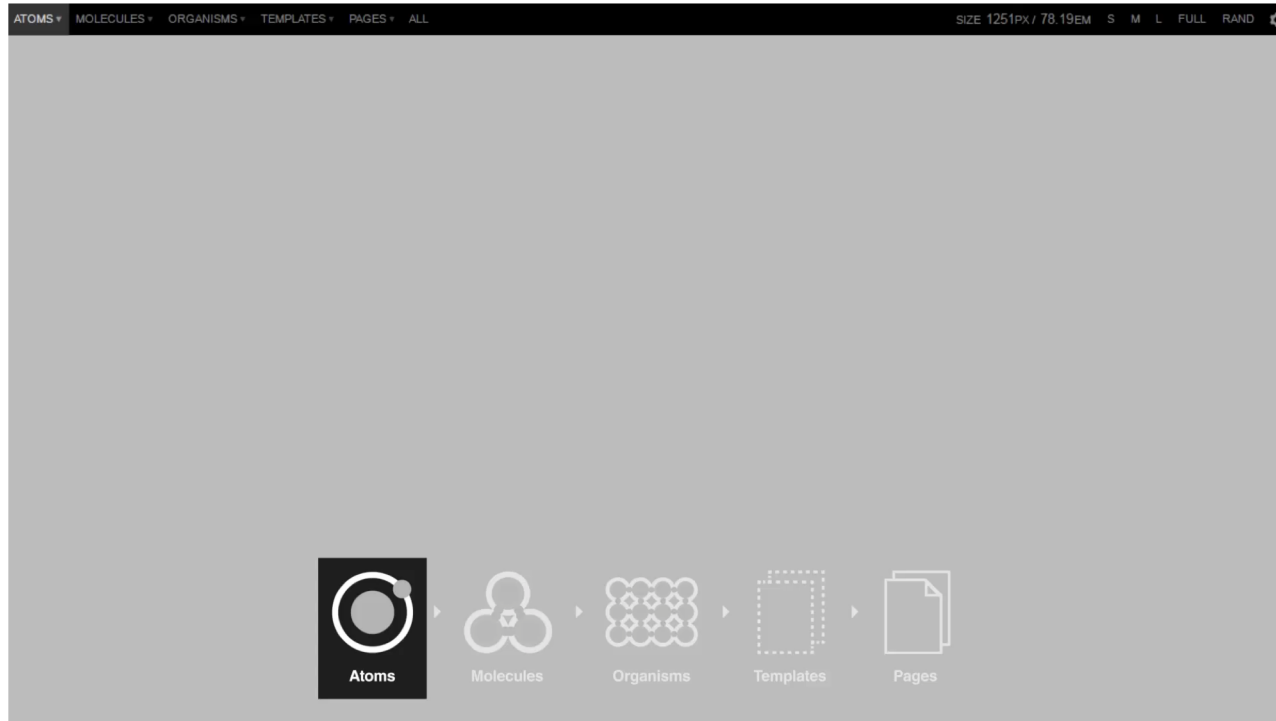
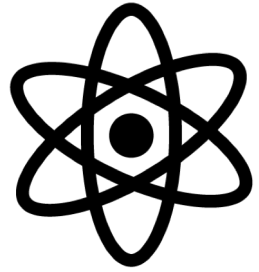
Enter Pattern Lab!



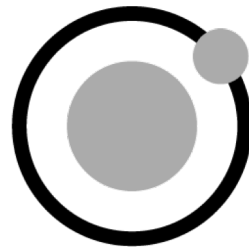
An atomic framework that helps us build thoughtful, pattern-driven user interfaces using atomic design principles.

- Produces final Pattern Library site
- Creates navigation of components
- Utilizes a built-in viewport resizer
- Develops comprehensive documentation

Atomic Design Principles



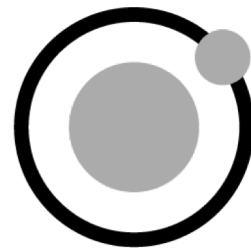
Atoms



Base Components

- Smallest a component can be broken down
 - Fonts, colors
 - Inputs, buttons
 - Paragraphs, section headers, lists

Atoms



Text Input

Text Input *

Text Input *
...

Buttons

Default

BUTTON

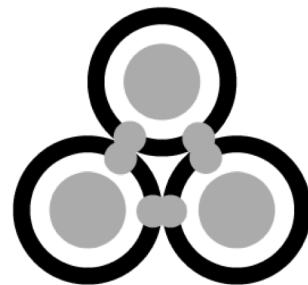
Button

Small

BUTTON

Primary Button

Molecules

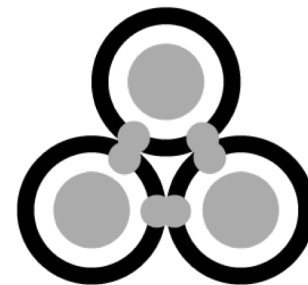
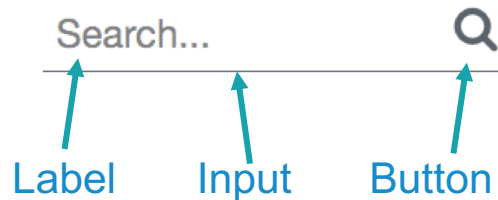


Building Complexity

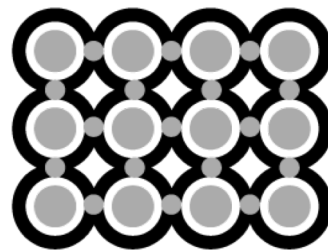
- Two or more Atoms that come together to create a new component
 - Search: Label, Input, Button
 - Cards: Image, Heading, Paragraph, Link

Molecules

Search Box



Organisms

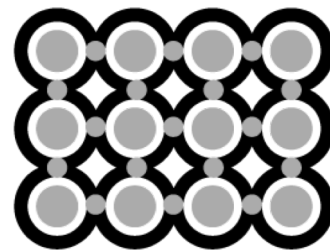


Areas of Content & Functionality

- Two or more Molecules and Atoms that build a piece of the interface
 - Header
 - Footer
 - News Feed

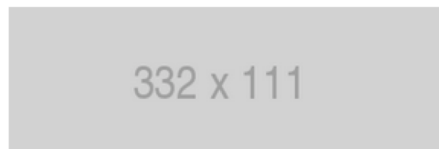
Organisms

Header



Site Top Menu Molecule

Social Media Links Molecule



Logo Atom

Main Menu 1

Main Menu 2

Main Menu 3

Main Menu 4 ▼

Main Menu 5

Header Menu Molecule



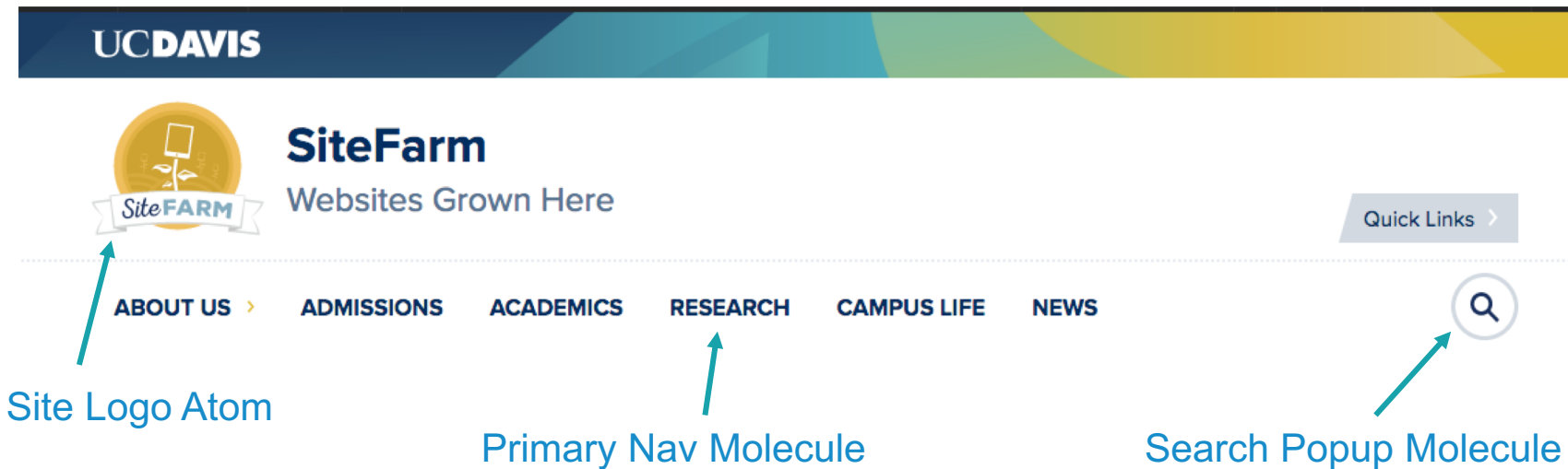
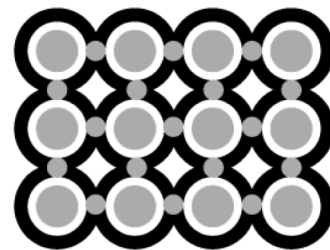
Search...



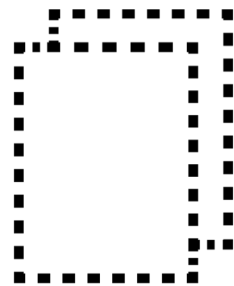
Search Molecule

Organisms

Header



Templates

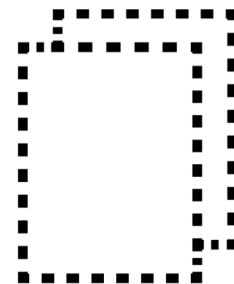


Page-Level Layout and Interactions

- Using Organisms to build a wireframed template for a type of page
 - Homepage
 - Basic Page
 - News & Event Listings

Templates

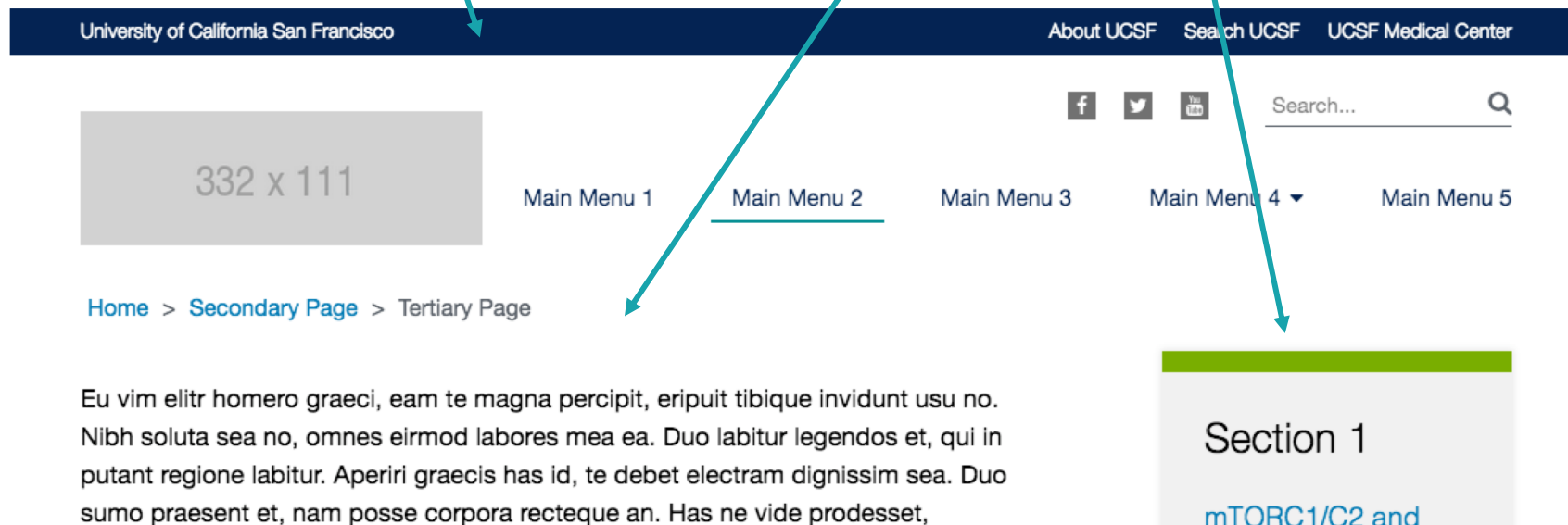
Basic Page



Header Organism

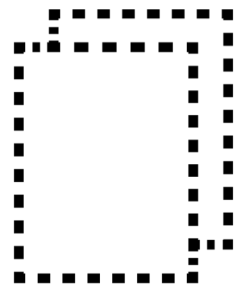
Content Organisms

Sidebar Organism



Templates

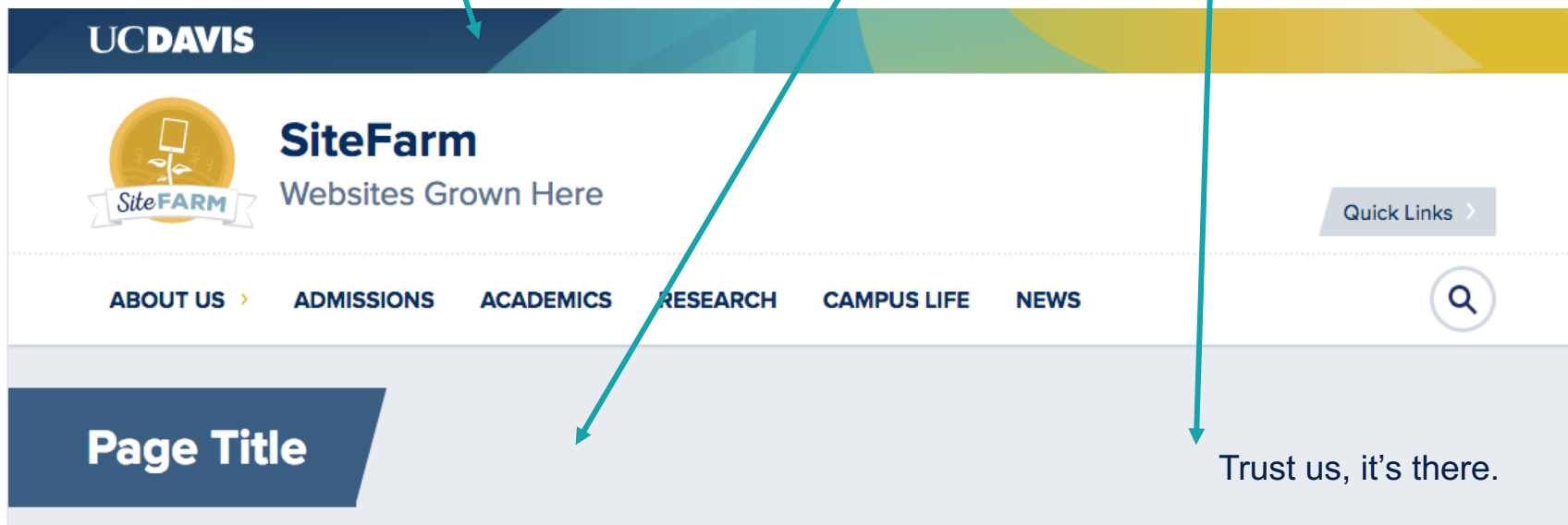
Basic Page



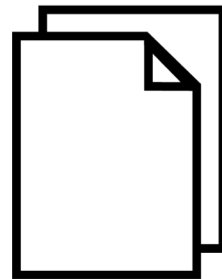
Header Organism

Content Organisms

Sidebar Organism



Pages

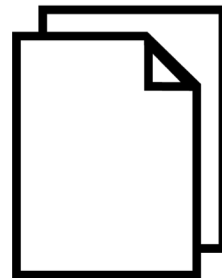


Inserting Real Content

- Final page layout and functionality using real content
 - Homepage
 - Basic page
 - News & Events Listings




Pages


Introduction Page




University of California San Francisco

About UCSFSearch UCSFUCSF Medical Center



Search...

 Web Pattern Library

Main Menu 1Main Menu 2Main Menu 3Main Menu 4 ▾Main Menu 5

Home > [Secondary Page](#) > Tertiary Page

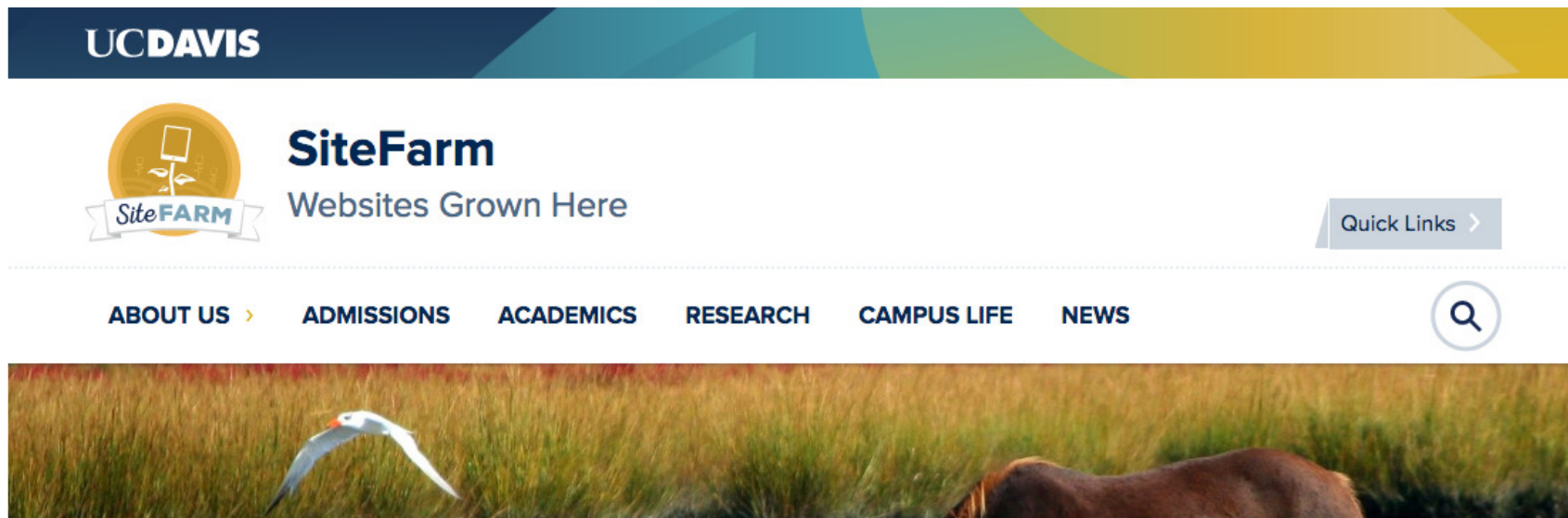
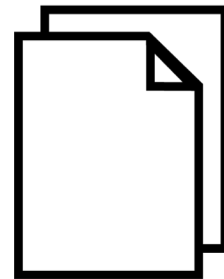
Welcome to UCSF's Web Pattern Library

Section 1

[mTORC1/C2 and](#)

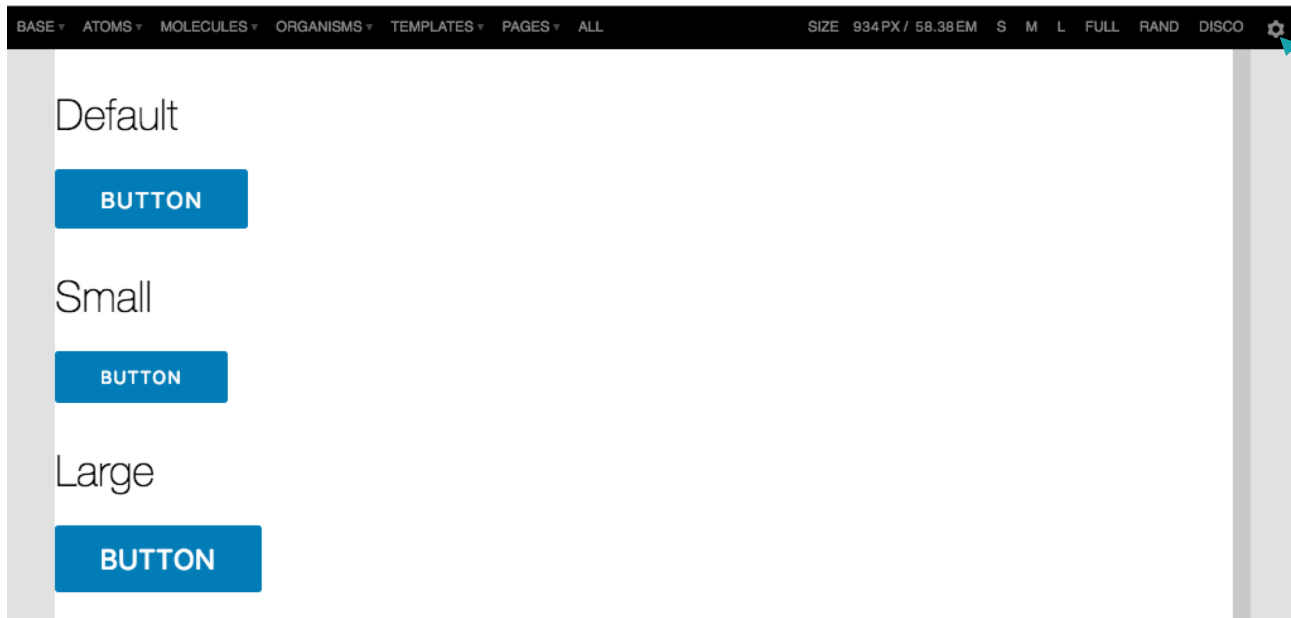
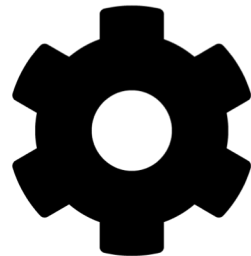
Pages

Homepage Page



Documentation Tool

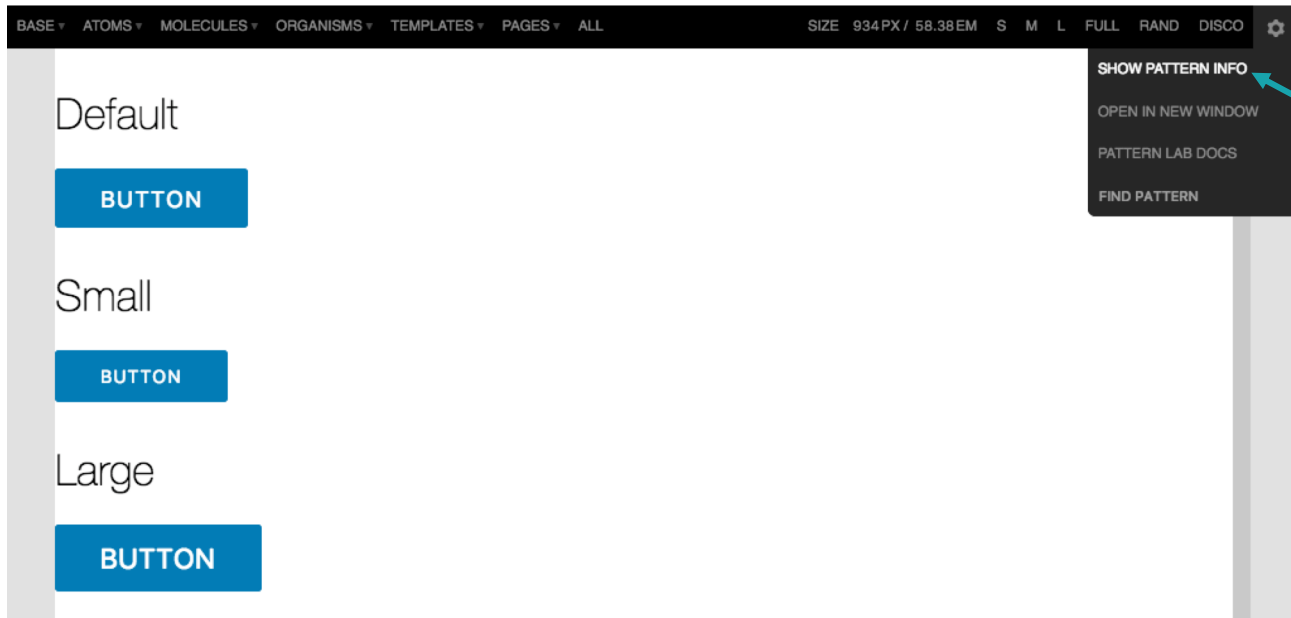
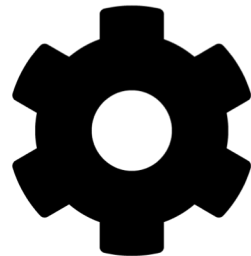
Accessing the Documentation



Gear Button

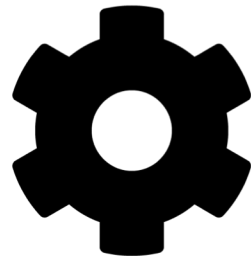
Documentation Tool

Accessing the Documentation



Show Pattern
Info

Documentation Tool



Accessing the Documentation

The screenshot displays the Documentation Tool interface. At the top, a navigation bar includes links for BASE, ATOMS, MOLECULES, ORGANISMS, TEMPLATES, PAGES, and ALL. The main content area shows two button components: 'Default' and 'Small'. Below these, a panel titled 'BUTTONS' provides details for the selected component. The 'state' is 'complete', and the 'Description' is visible. A code editor at the bottom shows the Twig and HTML code for the buttons. A teal arrow points from the text 'State, Description, Usage, Code, Dependencies' to the code editor area.

Default

BUTTON

Small

BUTTON

atoms / buttons

BUTTONS

state: complete

Description

Twig HTML

```
<h2>Default</h2>
<p><button class="btn" name="Descriptive Button Action" type="button">Button</button></p>
<h2>Small</h2>
<p><button class="btn btn--small" name="Descriptive Button Action" type="button">Button</button></p>
<h2>Large</h2>
```

State, Description,
Usage, Code,
Dependencies

Flavors of Pattern Lab



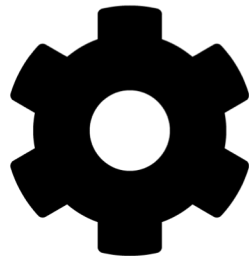
Node Versions

- Vanilla Edition
- Gulp Edition
- Grunt Edition
- Webpack Edition

PHP Editions

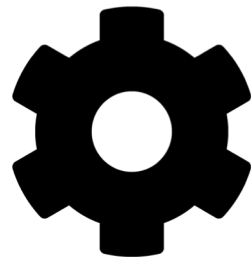
- Mustache Edition
- Twig Edition
- Drupal Edition
- Thin Edition

Technology Requirements



- Build requires PHP and Node.js
- NPM to manage development assets
- Bower to manage browser assets
- Gulp/Grunt to run tasks and builds
- Sass to write CSS

Incorporating Into My Project



Option 1: Place directly inside a website

■ Pros

- Everything in one place
- Access styles directly from main website

■ Cons

- Styles are not easily used outside the main website

Option 2: Keep it separate and sync styles

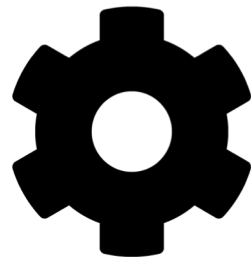
■ Pros

- Everything can be reused across multiple websites
- Pure beautiful markup

■ Cons

- Integrating into websites is more complex

Syncing Into My External Website



- Gulp task: **newsite**
 - Copies necessary config out of a “starterkit” into an external website/CMS
 - Copies initial styles over
- Gulp task: **themesync**
 - Sync styles into an external website/CMS
 - Only copies sass/css, javascript, and images
 - Markup is up to each external website to manage

How Can This Help All of UC?



Sharing the Workload by Reusing Code!

- Boilerplate Pattern Library
- Build on development knowledge base
- Reduce accessibility concerns
- Increase scalability
- Share new and better patterns
- Hugs and PUPPIES!



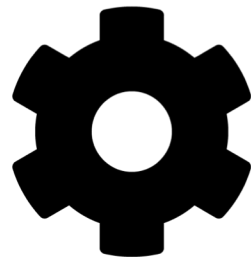
Proposed Improvements



We're Striving to Make Things Better!

- Better code documentation
- Mobile tables and tabbed data
- Documentation on incorporating with Drupal CMS
- New, and improved, patterns
- More advance automations

Get the Code



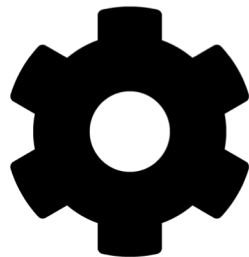
UCSF Pattern Library

- github.com/ucsf-web-services/ucsf_pattern_library

UCD Pattern Library

- bitbucket.org/ietwebdev/sitefarm-pattern-lab-one

Using the Code

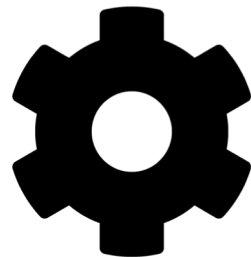


The Library is Open!

Online demo of patterns with code and documentation:

- UCSF's Pattern Library Website (webpatterns.ucsf.edu)
- UCD's Pattern Library Website (ucd-one-patternlab.s3-website-us-west-1.amazonaws.com)

Other Documentation & Support



- Pattern Lab (patternlab.io)
- UC Tech Slack, #pattern-library (uctech.slack.com)

Q&A, Slack channel: #pattern-library



Jayson Jaynes

Web Developer

ITS Web Services

Contact: Jason.Jaynes@UCSF.edu

Slack: @jaysonjaynes-ucsf



Mark Miller

Web Developer

IET Professional Services

Contact: MrkMiller@UCDavis.edu

Slack: @markmill



Thank you!