Guidelines for authoring content
at CriticalZone.org

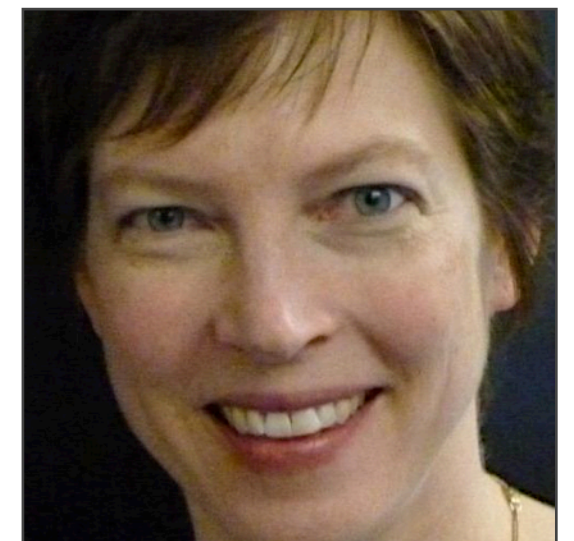CZOData Cyber Seminar #7
29 April 2014

David Lubinski
CZO Webmaster (part-time).
Web Designer/Developer,
based at INSTAAR, CU-Boulder.

Shelly Sommer
INSTAAR Information &
Outreach Director

Hi, I'm David. Most of you know me. I'll be tag teaming with guest speaker Shelly. She kindly volunteered to help CZO think more carefully about creating effective content. Shelly and I both work at the Institute of Arctic & Alpine Research.

Today, we're going to talk about principles and ideas that help you create better content more easily and more frequently.

David – working 1/3 time for CZO in 2014 (mostly to launch new CZO sites and improve data discovery)

Shelly – INSTAAR communications, social media, web content, outreach
        her role also includes managing the INSTAAR library (books, periodicals)
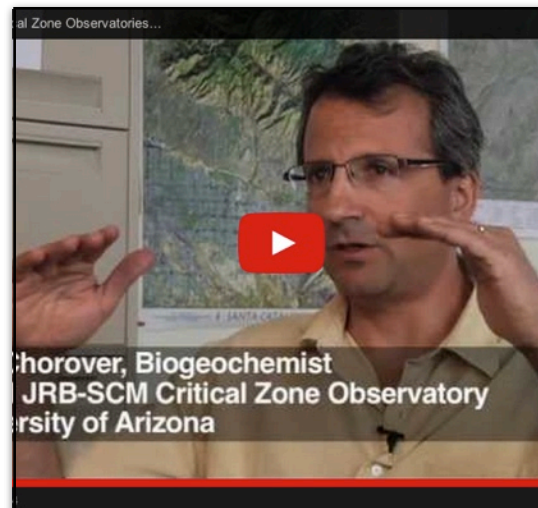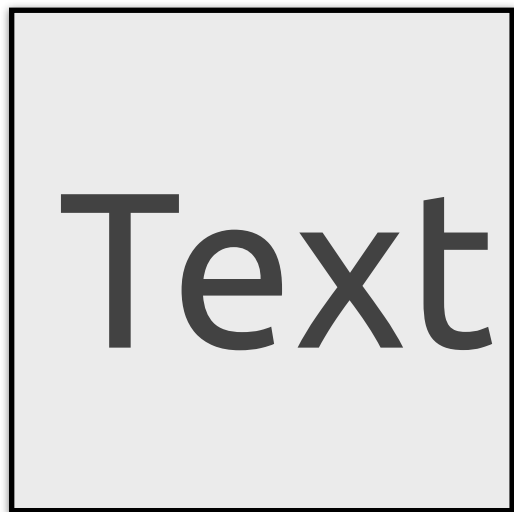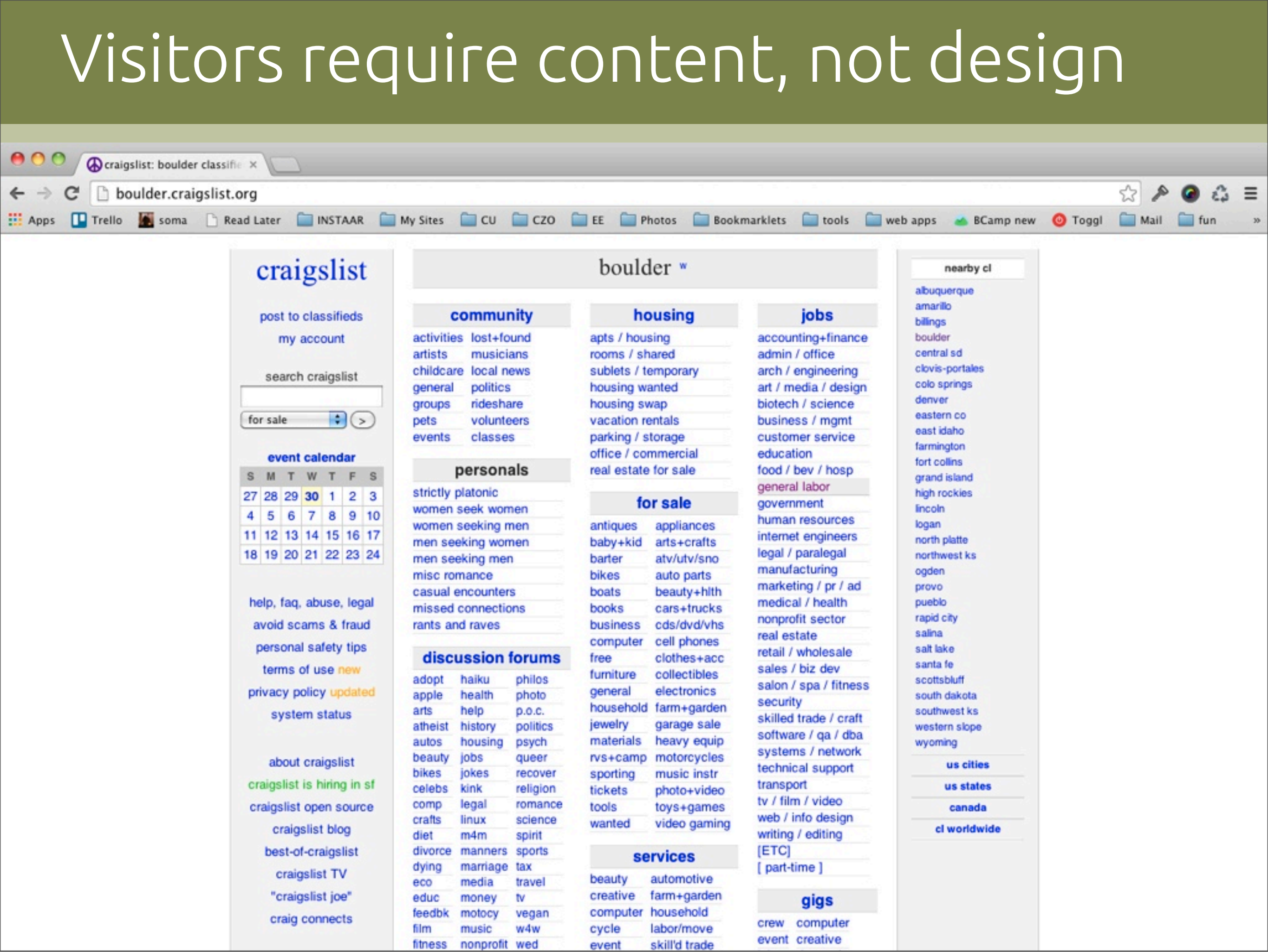
Text

Etc...

Let's define "content" since it's kind of an ambiguous term:

Content is what your site visitors are looking for (the information).
Content is the whole enchilada (text, images, videos, documents, data, social media posts, etc).

So, Content is Critical...

Visitors require content, not design

People come to your site for the content... not to see its' design.

And they usually have a pretty specific goal in mind (esp. on Craigslist).

Good design will help make your content more effective... but it isn't required.

Update CZO Website ToDo List

1. TIPPY TOP
- **Performance**
   (site speed, front and back end, more efficient code, may consider speedier host too)
- **Data Portal connection**
   (metadata sync, new geoportal UI)
   (about 2-3 months of funding for Lubinski)

****
2. TOP
- Site Search
   (Site wide with Google CSE and CMS-driven search for specific needs like person search)

- Information Architecture and new Home Page
   (Move utility nav items like about, news, events, into one new About section that's part of main menu) Performance
   (site speed, front and back end, more efficient code, may consider speedier host too)
- Content Gaps and Quality
   (all CZOs and National)
- National web pages
   (remove orange banners, some pages to show cross-CZO compilations)
- Maps
   (more standard geospatial metadata, better dynamic google maps)
- Goals and metrics of success
   (Success if more likely with better articulated goals and ways to measure progress)

****
3. HIGH
- Newsletter Signup form and Email List of supporters (ie MailChimp)
- Photo Gallery & Video Gallery
- Inline video without custom coding
- Tighter, more flexible Interface
- Improved Outreach through Hands on Activities and other content
- Online Seminar Support
- More flexibility and options for displaying name of CZO
- Reporting of information (ie NSF annual reports)

****
4. MEDIUM
- Affiliations for People, more flexible (time period, alumni, etc)
- "Grad Students" & "Undergrads", combined on front end into "Students"
- Undergrad Students, easier ways to track them, especially those only peripherally involved
- Publication URL's, switch to ID-based permalinks since titles change during publication process
- Collaborators vs Cooperators, lists or other ways to track
- New "Projects" channel, track them and relate them
- Entry Versioning, rollback an entry
- Discussion Forum of some kind
- Social Media for all and make Twitter etc more visible in the interface
- More Screencasts and make them available from backend
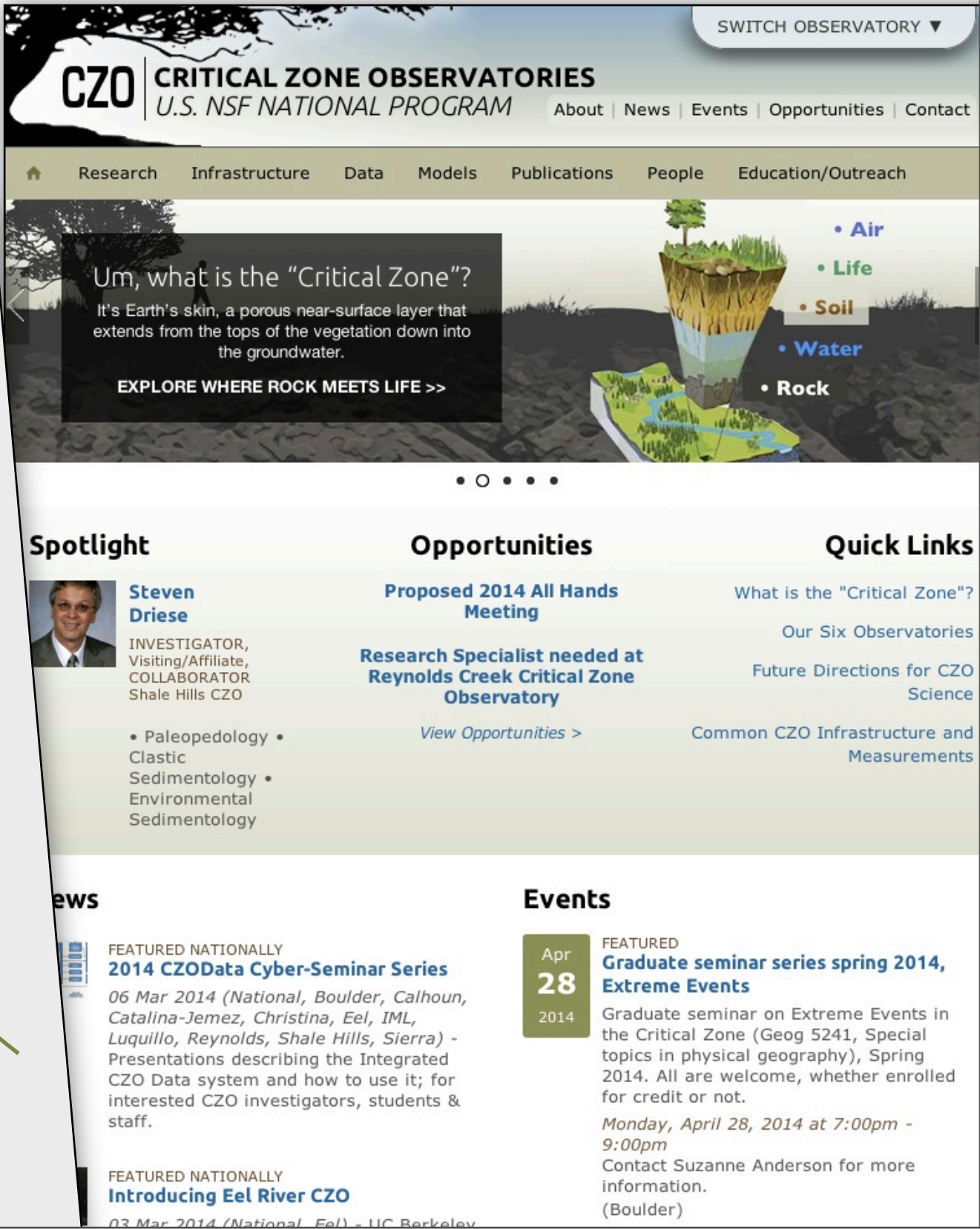
Because Lubinski is funded to work on design and development, the CZO ToDo list focusses on items like faster page loading, sitewide search, easier data discovery.

But too few items emphasize content; we need to prioritize them more.

Authoring content isn't simple, nor easy

And another reason for higher prioritization of content is that authoring it is almost always harder than expected and often under appreciated. (this despite everyone seeing bad or outdated content on the web)

It may not be rocket science, but authoring content takes skill, time, and effort.
An abbreviated list of tasks:
– Write effectively for the web (not print) (be a journalist & editor)
– Communicate effectively with audiences via Social Media (be a communications person)
– Create compelling imagery and layout (be a photographer & graphic artist)
– Use a CMS (be able to handle some suffering)
And you need to do all these things regularly and sometimes on a deadline...
as well as work collaboratively with multiple people, incl nudging them for content.

Large corporations work hard to find good web communicators.

computer photo: https://www.flickr.com/photos/npslibrarian/2104266003/ Writing photo: https://www.flickr.com/photos/davidsilver/11942362114/ Person photo: https://www.flickr.com/photos/ilri/3965928706/

We need a content strategy update

NATIONAL

|	
BOULDER (CO)	IML (IL/IA/NM)
CALHOUN (SC)	LUQUILLO (PR)
CATALINA-JEMEZ (AZ/	REYNOLDS (ID)
CHRISTINA (DE/PA)	SHALE HILLS (PA)
EEL (CA)	SIERRA (CA)

And if there weren't already enough reasons to put more emphasis on content...
CZO has grown significantly in the past year:
– The four new CZOs launched their new web pages in April.
– And we will probably have a CZO Nat'l Office in 2014... NSF is reviewing proposals.

So, 2014 is a good time to revisit our content:
strategy, audience, identity, goals, coordination, workflows, etc.

Today's talk is a start

General principles of content strategy
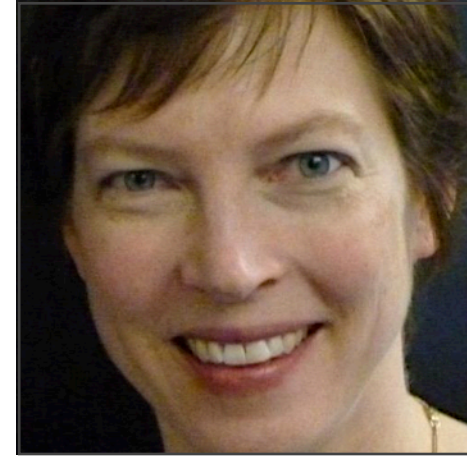
Examples & **Ideas** for CZO

Please interrupt us with questions...

Today's talk touches upon a wealth of topics; it could easily be a multi-day workshop.

Consider it an introduction; we will give resources and ideas for followup at the end

Shelly will concentrate on principles, David on showing specific examples and ideas for CZO.

We'll cover ideas that can help CZO in both the short- and long-term.

General principles
of content strategy

Shelly Sommer
Information & Outreach Director
Institute of Arctic and Alpine Research
University of Colorado Boulder
shelly.sommer@colorado.edu

SHELLY

Thank you for inviting me. It's nice to meet all of you.

Survey of participants – worst irritations of working with content:
–   Having to enter same content in several places.
–   People assume content happens "by magic" – don't understand effort it takes to get or create good content, or the time it takes to arrange it well online.

Why a strategy for content?

- Better experience for your users.

- Easier to create and manage content.

- Helps you work with constraints.

- Gets all your content to work together.

- Support for making the hard calls.

SHELLY

I'll share some ideas that worked for me. Mostly, content strategy comes down to having a plan. You can start from where you are, and use the strategy to get where you need to be without wanting to kill yourself and everyone else involved.

What you wind up with is better for your users, for yourself, and for your CZO.

Foundations

AUDIENCE	Know who they are
IDENTITY	Know yourself
MESSAGING	Know what you want to say

SHELLY. Before we actually get into writing anything, let's look at foundations. If you have those nailed down, you can go straight to creating the good stuff and avoid wasting a lot of time down blind alleys. You also gain a sense of priorities that can help you reach your goals.

Audience: Know who they are
This is possibly the most important thing – know who you're trying to reach. Not in abstract – the more particular and individual, the better. What are their concerns? What do they want to do? What do they already know? Where are they – where do you need to go to meet them? Can you actually capture one of these people and talk to them?
Then, when you're creating content, you're not trying to talk to everyone and no one – you're talking to that person.

Identity: Know who you are
Who are you, really? What sets you apart? How is this identity well/not well represented on existing site?
The web is a conversation, and what you say in that conversation reveals who you are. Make sure you're showing what you want to show

Message: Know what you want to say
Intersection of what you have to offer and what your users want and need.
What are the most important things you want to get across or help people do? Try for just 1–3.
Really saves you time because it tells you where to focus. If it's not on that list, it is by definition not as important.
Spend time on the foundations, and it will make the rest of your job so much easier – you can check everything you do against them. David has some info to share on previous CZO conversations about AIM, over.

CZO WEBSITE FOUNDATIONS

Audiences

Identity

Objective *

Goals *

Messages

For the 2012 website launch, we spent some time on the foundations that Shelly summarized. I'll discuss some of the earlier decisions, adding two additional topics to Shelly's list (see asterisks).

We should revisit the 2012 foundation in 2014. We've expanded significantly in the past year and need to capture the full range of opinions.

CZO Audiences

2012

CZO'ers (incl grad students)

PEERS (incl grad students)

NSF

Future?

General public?

K-12?

Higher Educ?

Our 2012 audiences were all related to the science at a pretty high level. An "inward" facing audience if you will. Starting here makes sense.

A logical expansion to secondary audiences would be to look outward to outreach audiences. Creating content for them would be substantive effort; we'd need resources and commitment to do it well.

2012

"know who they are"

CZO Design Guidelines Dec 2013.pdf (4 pg)

AUDIENCE NAME? Pick as few audiences as possible.	CZO'ers (incl. grad students)	PEERS (incl. grad students)	NSF (mostly program managers)
WHAT ARE THEIR TOP TASKS/ QUESTIONS? What prompts the visit? When is the visit? What is the overall scenario? Where should they go after completing task/question?	1. Contact a specific person. 2. See what my CZO is doing. 3. Lookup basic info for a field area 4. See what other CZOs are doing. 5. Find data, within & cross-CZO. 6. Find pubs by keyword, author. 7. See AGU abstracts in one place. 8. See dates for big meetings like Goldschmidt	1. What is CZO? Its' goals? 2. What has CZO been doing? 3. Lookup a specific person. 4. Find publications on a topic. 5. Browse or search for data. 6. Compare Methods/Protocols to my own.	1. Assess and evaluate individual CZOs and the combined CZO program: - Research activity & productivity. - Infrastructure development. - Leadership, incl. with CZ science. - Collaboration Cross-CZO & Intl. - Education & outreach. 2. Find info related to a specific person.
WHY SHOULD THEY VISIT THE CZO WEBSITE INSTEAD OF ANOTHER RESOURCE? Why is this website valuable to them? How is this website more valuable than other websites or resources?	CZO'ers (incl. grad students) are busy folks and the CZO website should be the easiest place to find basic info. The website should also be engaging (ie videos) and feel a bit like their science "home". Ideally, CZO folks become so proud that they show the website to friends, family, and others.	Peers seek the best ways to advance their own research: ie publications, data, ideas, and people. The CZO website should be relevant to them personally. And if they are a veteran researcher, the website should acknowledge their contributions to CZ science.	NSF folks need to access basic, up-to-date information, and not have to ask PIs or pore through multiple resources. The website allows them easily compare the same info across CZOs.
WHAT ARE THE CZO "BUSINESS" GOALS RELATED TO THIS AUDIENCE? What do you want this audience to	We want fellow CZO folks to: 1. Advertise their expertise, publications, and research activity.	We want peers to: 1. See that CZO is helping provide leadership for the direction of CZ science.	We want NSF to: 1. See that their money is well spent. Good ROI. 2. See that the CZO "experiment"

As Shelly said: "Know who they are"

For the website in 2012 we looked in detail at top tasks, business goals, key messages, and more per main audience. We tried to incorporate many of these ideas into the website.

This table fragment is part of a 4-page PDF available on Google Drive (CZOData)

2012 CZO Identity?

CZO

"know yourself"

Interdisciplinary
- Untangling intertwined Physical/Chemical/Biological
- Combining the gamut of bio- and geosciences

Collaborative
- Working as teams, individual observatory & cross-CZO
- Connecting CZ scientists and CZ programs worldwide

Pioneering
- Forging a new and evolving realm of science
- Spanning a huge range of spatial scales & timescales
- Answering fundamental questions
    ie How does the Critical Zone form? Operate? Evolve?

Altough we didn't work as a group in 2012 to discuss and write down key traits about CZO's identity, here are three traits that were used by Lubinski when working on the website.

We may want to revisit.

2012 Website objective

"

To establish the criticalzone.org website as an indispensable resource for hypotheses, models, and data related to critical zone science - for researchers new to the field and those with many years of experience.

2012 objective – matches our inward facing audiences

2012 Design goals

1 Make it easier to update content

2 Enable content to serve multiple purposes

3 Integrate CZOs by sharing and interconnecting content

4 Show a consistent interface for data discovery

5 Provide consistent messaging & branding across CZOs
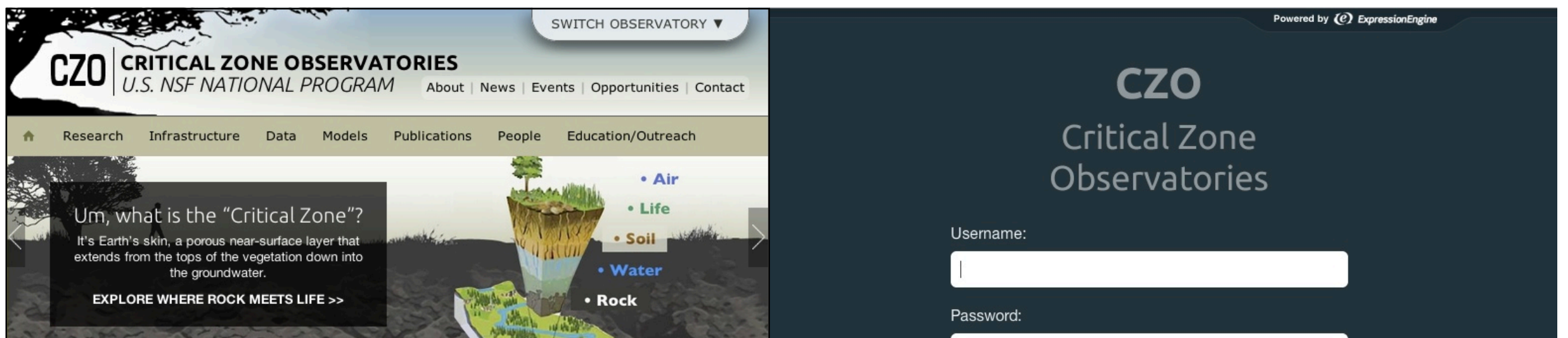
2012 website design goals, which included both the front and back end of the website.

We've reached all of these goals, although some better than others. For example, the current websites are much better integrated (#3).
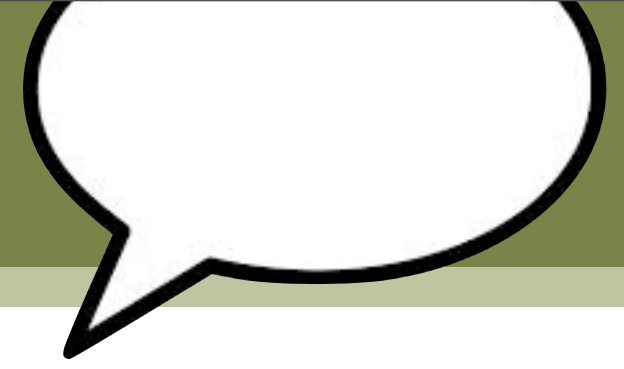
2012 Goals for the website?

What does CZO need the website to do?

How do we know if the website is successful?

What are some metrics to help measure success?

In 2012 we never really settled on high-level goals from CZOs perspective.   We definitely should discuss new ones and write them down.

2012 Messaging?

"know what you want to say"

Team effort?
Working closely together in interdisciplinary teams.

Friendly & Open?
Encouraging cooperative and synthesis research.

CZ Leaders?
Helping advance CZ science through data and models.

As Shelly said: "know what you want to say"

In 2012, we didn't articulate our top messages. We did, however, consider some messages for each of our three audiences separately. The above draft covers some of the commonalities. These kinds of messages are worth a revisit too in 2014.

Tools

Content inventory

SHELLY
Let's get into some practical tools that can help you take your discussions about audience, identity, and messaging and actually put them into your content.

Content inventory:
The first thing is a content inventory. This is just a spreadsheet that lists all the content your CZO actually has online. What do you have, and how good is it?

And YES, your social goes in here as well as web content.

To make one, basically start on your home page and click every link until you've listed everything and looked at its condition. At its most basic you'll just have page titles and URLs, but I like to include some quality info to help me decide what to work on.

Here's a content inventory I did a few years ago. As well as listing what we had, I looked at how well our existing content expressed our audience, identity, and messaging.

You can see I added a qualitative score for quality, marked how up to date it was, and so on to give me a pretty good picture of where we stood right then.

ROT stands for redundant, outdated, or trivial. If it's one of those things, don't bother putting the content on your site.

Tools

Editorial calendar

4			
5			
6	Jan	Fill in semester's Noon Seminars from Bruce's Google Doc: https://docs.google.com/spreadsheet/ccc?key=0AlHmA	
7		Fill in semester's Grad Student talks (Colin's Google doc https://docs.google.com/spreadsheet/ccc?key=0Akz_79Nk	SG=(Inst Arctic &
8		collect INSTAAR pubs from previous year from Web of Science. Use advanced search with code:	
9	Feb	collect INSTAAR USGS affiliate pubs from previous year from USGS Publications Warehouse	
10		finalize pub list using FRPAs, Stable Isotope Labs pubs list, and ARL lab pubs list	
11			
12			
13		Arctic Workshop. In 2014, at CU	Sample from AGU: geology.gsapubs.org/con
14	Mar		
15		Tweet about AAAR upcoming articles	
16		Apr. 1 home page story: throwdown btw. Foram and Diatom labs. Get Ursula and some of Diane's students to h	
17	April	Apr. 1 home page story: The zombie apocalypse: How will changing climate impact shuffling patterns, brain eati	
18			
19		Road trip: create photo gallery of how we get around: Irina's dogsled pic from 2012, Bob A's Alaska backpacking	
20	June		
21			
22			
23		Refresh INSTAAR slide show and send to David Oonk at CIRES to display in rotation on Regent monitors	
24	August	Fill in semester's Noon Seminars from Bruce's Google Doc: https://docs.google.com/spreadsheet/ccc?key=0A	
25		Fill in semester's Grad Student talks (Colin's Google doc https://docs.google.com/spreadsheet/ccc?key=0Akz_	
26		Fill in semester's Grad Student talks (Colin's Google doc	

SHELLY
An editorial calendar keeps you on course. It helps you keep track of important milestones on the web site and in your social media all in one place. You can tie content to events on your calendar – for instance, AGU or reporting student research. I also use the editorial calendar to make sure I show the diversity of our science and our researchers (age, gender, etc.). It's easy to just show whatever news floats in, but you run into danger of showing your CZO in a skewed way without a plan.

I use a spreadsheet even simpler than the content inventory – you can use any kind of to do list tool that works for you.

Tools

Voice and tone guide

- This, not that
- Show positive and negative examples

- Mailchimp guide   voiceandtone.com

SHELLY
This is something most of your users will never notice. But how you speak reflects who you are – and it has a big effect on your audience's trust.

It helps to think about the right conversational level that will reach your audience, and really reflect the personalities of your researchers.

Your voice is the part that doesn't change – tone can change depending on who you're talking to or what situation you're in. For instance, you might be funnier in social media posts than in your news stories.

An easy way to do this is to write down some "this not that" statements. For instance, if a formal tone appeals to your audiences, you might want to be formal but not stuffy. On social media for INSTAAR, we want to be funny but not sarcastic. You might also collect positive and negative examples – they really help clarify your adjectives.

The best in the business at doing this is Mailchimp, the online newsletter people. And they've opened their voice and tone guide to the public, so you can see it. They identify – for every kind of content they have – what their users are trying to do, how they're feeling about it, and what kinds of tone to use or not use to support them. It's overkill for us, but it's great inspiration.

Tactics

Writing for the web

- Make it useful and useable for your readers
  - Say what you need to say, then stop
  - Speak in human
  - Help your reader understand where they are
    - Put most important stuff first
    - Break content into easily skimmed bits
    - Useful, consistent subheads
    - Descriptive links

SHELLY
We've showed a few tools you can use to translate your audience, identity, and messaging into manageable work. Does anyone have any questions or points to bring up before we get into a few practical techniques?

Writing for the web is a lie. You are not writing for the web. You are writing for a person.

The bonus: If you're clear on your audience, identity, and message, then writing the content for any web page takes no longer than writing a long email – something we all do every day.

So, how do you do that?

   – Respect your reader's time – they shouldn't have to hunt for the point
   – Help people scan and skim
   – Help people understand where they're going next – also helps people with screen readers.
Please never type "click here for more information" again.

Tactics

Using images

- Images are like words – you should have a reason for using them

- Tell a story (don't illustrate a manual)

SHELLY

No random pics to make it "exciting"!

Use your captions.

National Geographic is the best at using images. Their reporting is brilliant, but if all you do is look at the pictures and maybe read a caption or two, you still get the gist of the story.

Tactics

Working with your templates

- Go for CRAP design
  - Contrast
  - Repetition
  - Alignment
  - Proximity

- If you see a summary field, use it

SHELLY. You've worked hard to pare your message down to the right words and images. Don't get in your reader's way by jumbling them all together. Use the templates available on your web sites to make that easy.

CRAP design:
Contrast means things should be either the same, or different. Making them a little bit different kinda confuses people.

Repetition means keeping a consistent format for things that are the same. If you have a bunch of news items or data sets, they should look consistent – this helps people understand they're part of the same set of things.

Lining things up gives clarity.

Then there's proximity. If we see things next to each other, we think they're related. So don't put things that are related far apart from each other.
These principles basically boil down to keep it simple. Sometimes people worry about their pages "looking all the same" but don't – your reader would rather understand you clearly.

Your web templates can help people scan your content quickly and decide what they want to delve into.

There's a quote on my wall that says "good design is a form of kindness." Be kind to your users – help them do or understand what they want to do or understand – and they will come back to you.

CZO TOOLS

Content inventory

Editorial calendar

Voice & tone guide

Let's briefly discuss Shelly's tools with respect to CZO.
Because of the network nature of CZO, all three of these tools will have components that are at a National/ cross-CZO level as well as at the individual observatory level.

We haven't done much at the National level (similar to our lack of effort on Foundational Goals and Messaging)

But we would all benefit from discussion and some decisions at the National level. To help kick things off, here are some questions and ideas to consider for all three tools...

Content inventory - questions

What pages should be mandatory for all CZOs?

How to improve content for difficult areas like Models and Education/Outreach?

Are we creating any content that should be removed if it gets too old? News articles?

Should we try to assess content quality across CZOs?

Will the National Office have a communications person who can work with individual CZOs to improve content and promote cross-CZO consistency?

As a group, what pages should be mandatory? In other words, when switching laterally, which pages must be there?

Content Gaps. How do we get more CZOs to spend time on difficult, aspirational content like that about Models and Education/Outreach? ie Hands–on activities (news, events).

ROT = Redundant, Outdated, Trivial
Are we regularly generating content that should be removed from website as it ages? It could still remain in the CMS ie Do we want to keep showing old news from many years ago?

Editorial calendar - ideas

ANNUALLY

- NSF annual report

- CZO all-hands meeting

- Start of school year (Sep)

- AGU meeting (Dec)

TWICE/YEAR

- archive old announcements

let's think of more....

May	
Jun	**Announcements** - archive old ones
Jul	NSF Annual Report - Update personnel, publicatio...
Aug	
Sep	CZO All-Hands Mtg - Update research and publi... School Year - Update student listings
Oct	
Nov	AGU - create summary of talks , prep longer n...
Dec	AGU - a few news stories **Announcements** - archive old ones

Here are some preliminary ideas to consider for an editorial calendar.

Reporting – Luquillo CZO is taking the lead to look at how the CMS could be altered to create easier annual reports for NSF and others.

Announcements – These are news entries using the Announcement category. If you use the optional Expiration Date field, the announcement will automatically be archived for you at the right time. ie a job posting with an application deadline. If you don't use Expiration Date initially, clean up by adding one after the fact. Maybe twice/year?

Voice & tone guide - questions

- Voice/tone of national vs per CZO?

- Content audit for Voice/tone? Nat'l Office person?

- Overall level of formality? Add blog for informal news?

- Adjectives describing CZO traits, personality, values?
     Interdisciplinary, collaborative, pioneering?
     Geeky, earnest, helpful, generous, environmental?
     More ideas?

- What are some "this but not that" statements?
     Expert but not egotistic ?
     Determined but not stubborn?
     More ideas?

Reminder: Voice/Tone isn't what we say but how we say it. Articulating our voice isn't easy but can really help with showing expertise, inviting new members, communicating across disciplines, and so on.

We must have a simple, easy-to-implement guide given > a dozen active web editors.

Resources include http://voiceandtone.com/ , https://www.distilled.net/tone-of-voice/ , http://uxmag.com/articles/tone-and-voice-showing-your-users-that-you-care

CZO TACTICS

Writing for the web

Using images

C.R.A.P. visual design

Let's illustrate Shelly's tactics by showing specific CZO examples.

Writing for the web

- Say what you need to say, then stop

- Speak in human

- Employ useful, consistent headings

- Break content into digestible portions *

- Write Descriptive Links

- Put important stuff first

- Provide next step *

Here's a review of Shelly's bullet points for web writing. I've added two others (with asterisks) for which I will show examples too.

Break up long content into digestible portions:
Similar to headings, helps with the scanning process before folks shift to their reading mode. Examples include using bulleted lists instead of long paragraphs and converting long paragraphs into shorter ones.

Provide next step:
CTA, call to action, try to have only one strong one per page (no more than a few).   A chance to guide the user to visit somewhere else on your site.

Visual design tips

IMAGES

- Don't use as decoration

- Help tell the story

C.R.A.P. DESIGN

- Contrast

- Repetition

- Alignment

- Proximity

SWITCH OBSERVATORY ▼

SWITCH OBSERVATORY ▼

NATIONAL

BOULDER (CO)

CALHOUN (SC)

CATALINA-JEMEZ (AZ/NM)

CHRISTINA (DE/PA)

EEL (CA)

IML (IL/IA/MN)

LUQUILLO (PR)

REYNOLDS (ID)

SHALE HILLS (PA)

SIERRA (CA)

And here's a review of some of Shelly's bullet points about visual design.

On the right is the closed and expanded version of our new CZO switcher, which was needed because we couldn't fit the four new CZOs into the old menus.
The switcher has some "crappy" elements. Strong contrast between the white switch button and the dark list helps distinguish the differing purposes of those elements. Repetition shows that all the observatories are equally important. Alignment helps makes the list easy to parse and visually pleasing. Not really using Proximity.

Now we'll look at examples of Web Writing, CRAP Design, and using Images. We'll start with the National site and show an example page from every observatory in alphabetical order.
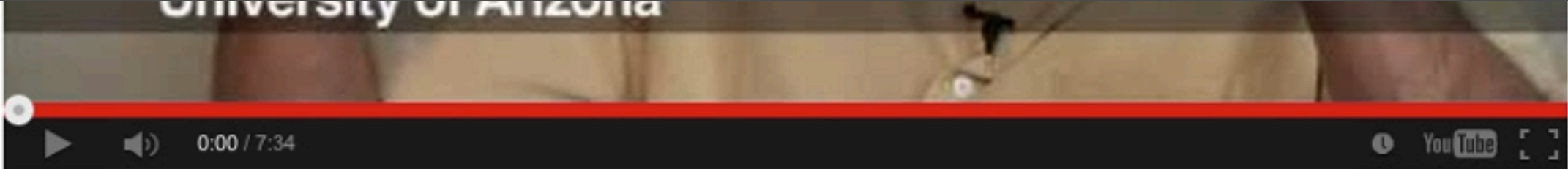
Produced by Shipherd Reed (University of Arizona), this video features interviews with researchers from the Jemez-Catalina CZO. See transcript.

Interested in learning more?

Explore Our Research >

Explore Further

RESEARCH | The Critical Zone | Multiple Disciplines | Cross-CZO Studies | Annual Activities | Annual Findings

NATIONAL CZO

Contact Us | Our Partners

CRITICAL ZONE OBSERVATORIES
U.S. NSF National Program

National Science Foundation

▲ TOP

Studying the zone where rock meets life

NATIONAL – What is the Critical Zone? page

– Provide next step
CRAP: Alignment

This page has an overt "call to action" at the bottom. After folks read through the page that defines the critical zone and its importance, what should they do? They can watch the video. And they can also visit the Research page.

In general, please try to have one or a few strong calls to action.

What is the Boulder Creek CZO? Watch our new video series.

15 Mar 2012

Want to learn more about us? Check out our new short video series; it covers Boulder Creek's unique setting and perspective on Critical Zone Research

Image: Watch videos about the BcCZO [Click image to enlarge]

✱ All Disciplines

Boulder

Learn all about us in our new videos. New videos and video chapters that discuss the CZO that spans from the Continental Divide (4120 m) to the western edge of the Plains (1480 m) and the types of research we

PLAYLIST | 1 / 6   Introduction To the BcCZO

0:00 / 1:46   YouTube

PLAYLIST | 1 / 5   BcCZO Data Introduction

BOULDER – News story about a video series

Using the summary field
– Say what you need to say, then stop
CRAP: Repetition, Alignment   IMAGES: tell the story

This page includes a nice summary, which is extra important for News entries because the summary field gets used on multiple pages that include news listings. If you don't write a summary, your initial main text will be truncated (which doesn't always work well).

A string of videos goes down the page, which use repetition and alignment to make their use obvious. Nice start image too. If Suzanne wasn't in the image, it would be much less engaging.

Calhoun researchers are bringing back to life gauged watersheds built by the U.S. Forest Service over 50 year ago. Re-instrumentation of the catchments is necessary to forecast changes in hydrologic functioning of the Calhoun CZ, and thereby test the Ecohydrological Recovery Hypothesis.

Archived stream and rain data housed at Coweeta Hydrologic Laboratory contain a detailed record of hydrologic response of eroded watersheds from the 1940s to present. The ability to hindcast will contribute to testing the Ecohydrological Recovery, Erosion-induced Carbon Dynamics, and Dynamic Persistence of Alternative States Hypotheses.

CALHOUN – Research page

IMAGES: tell the story

Nice example of visual storytelling. The photos combined with the captions tell the story of how old stream gauges are being revived, and old data merged with the new.

Pedology Course

The SWES upper division and graduate class Soil Genesis, Morphology and Classification, taught by investigator C. Rasmussen, takes field trips observe soils across the Santa Catalina Mountain environmental gradient. The field trips highlight the importance of climate, parent material, vegetation, and aspect in controlling soil formation and soil forming processes. These trips tie directly to CZO related research and results from CZO research are incorporated into the curriculum for this course.

Craig is discussing soil forming processes in desert scrub ecosystem.   Photo: Emiko Ariyasu

Snow Hydrology Course

The Snow Hydrology Course, led by Prof. Paul Brooks, includes an annual Spring Break field trip to the Jemez River Basin CZO that normally coincides with near maximal snowpack and SWE. Students in the class learn techniques of snow survey including depth dependent measurements of snow water equivalent, that provides a basis for long term CZO data acquisition and analysis and results are summarized in the paper:

Harpold, A.A., P.D. Brooks, S. Rajagopal, I. Heiduechel, A. Jardine, and C. Stielstra. (In Review). Changes in Snowpack Accumulation and Ablation in the Intermountain West. Water Resources Research.

Keep digging. Don't stop! Photo: Tongchao Nan

Geomorphology Field Course

The graduate-level geomorphology field and modeling course, taught by Prof. Jon Pelletier, includes field-based measurements in the Jemez River Basin and Santa Catalina Mountains

---

CATALINA–JEMEZ – Outreach > Higher Education page

– Employ useful, consistent headings
– Break content into digestible portions
CRAP: Repetition, Alignment   IMAGES: tell the story

This page does a great job with layout and storytelling. The consistency of the layout helps you understand that each course is equally important and allows you to quickly dive in to the course of highest interest or read them all. The photos give you a great sense of what the courses are like: learning in the desert, digging snow, etc.

CHRISTINA – Contact page

– Say what you need to say, then stop
– Speak in human

The contact page is super important, but often overlooked. This version keeps the message short and uses a clear conversational style. Well done and effective.

CZO | EEL RIVER
CRITICAL ZONE OBSERVATORY

About | News | Events | Opportunities | Contact

🏠 Research **Infrastructure** Data Models Publications People Education/Outreach

Field Areas

EEL INFRASTRUCTURE:

Field Areas ▶

Sensors & Field Instruments ▶

GIS, Remote Sensing & Geophysics ▶

Logistical Infrastructure ▶

+ More

Move laterally: Boulder | Calhoun | Catalina-Jemez | Christina | Eel | IML | Luquillo | Reynolds | Shale Hills | Sierra

ANGELO COAST RANGE RESERVE

31 km^2, 120-1260 m elevation, 10.1 °C,

The Heath & Marjorie Angelo Coast Range Reserve is a Berkeley-administered research reserve in the University of California Natural Reserve System. It covers

The Eel River CZO is based out of the Angelo Coast Range Reserve, part of the University of California Natural Reserve System with affiliation to UC Berkeley. The CZO operates at three spatial scales: 1) "Rivendell" is our intensively instrumented and sampled site and location for manipulative experiments; 2) Angelo Reserve tributaries and the South Fork Eel river provide the broader context; and 3) Eel River system provides upscaling, ocean interactions, and outreach context.

EEL – Field areas page

CRAP: Contrast, Alignment   IMAGES: tell the story

The illustration in the initial text/image area is not just visually attractive but communicates both the location of the field areas and how Eel CZO is studying multiple spatial scales. Moreover, it's narrow aspect ratio is an effective use of space.

Keep in mind that you can include text, images, or both in this space.

Theme B: Short- and Long-Term Dynamics of Soil Organic Matter

Key question: What is the dynamic relation between active and stabilized forms of soil organic matter (SOM) in IMLs and how does that relationship vary in activity centers and activity intervals? What are their effects on biotic and abiotic activities as they relate to SOM storage?

Soil organic matter (SOM) is the elixir of life in the critical zone, as it is central to sustaining both crop productivity and ecosystem services. Intensive agriculture causes a dramatic decline in SOM storage on the landscape. We hypothesize that intensive agricultural management can significantly modify the interrelated processes that affect SOM storage. The interactions of these processes influence the chemical reactivity of SOM and its structural characteristics, with potentially significant implications for the soil structure and residence times of solutes and solids.

Theme C: Coupled Surface Water – Groundwater Hydrology and Biogeochemistry

Key Question: How does the coupled interaction of surface water and groundwater control fluxes of water and solutes within the critical zone? How do the signatures of key materials that are exported (e.g., SOM and DOC) relate to those stored in the landscape?

Human activity is driving drastic changes in the hydrologic cycle through both short-term replumbing of the hydrologic system and long-term changes in both water availability and climate. In the short term, land use change alters hydrologic fluxes, including aquifer recharge and the stream response to storm events (e.g., flashier systems). At larger spatial and longer temporal scales, water withdrawals result in widespread drawdown of regional aquifers (e.g., the Ogallala aquifer in the Midwest). Finally, anthropogenic climate change is expected to redistribute water both spatially and temporally on the earth's surface. We hypothesize that engineered drainage reduces the residence time of water and its associated suspended/dissolved loads in biogeochemically active locations of the critical zone. We will predict fluxes of water through surface and subsurface domains with isotopic tracers to characterize both physical residence times and integrated biogeochemical signatures from the land surface through soils into the fluvial network, including interactions with deeper groundwater.

Theme D: Water, Soil, Sediment and Landscape Connectivity: Short- and Long-Term Budgets

Key Questions: How are the sources, fluxes, and sinks of sediment in IMLs distributed in space

---

IML – Research Foci page

– Employ useful, consistent headings
– Break content into digestible portions
CRAP: Repetition

This page is a good example of basic text formatted well for the web. The clear headings and subheadings make it easy to skim. Once the reader finds their target they can switch from scanning mode to reading mode.

NORTHEASTERN PUERTO RICO AND THE LUQUILLO MOUNTAINS

0-1075 m elevation, 1000-5000 mm/yr

The Luquillo Critical Zone Observatory (LCZO) is located in Luquillo Mountains of northeastern Puerto Rico. This Includes El Yunque National Forest, Rio Mameyes and Rio Blanco watersheds, surrounding coastal plains and nearby urbanized areas such as the San Juan metro area, Luquillo and Fajardo.

El Toro Wilderness Area

40.5 km^2,

Sabana Field Station

10.26 km^2,

RIO BLANCO

3.26338502 km^2, 0-1043 m elevation, 3080 mm/yr

Large Instrumented river drains the majority of the south side of the Luquillo Mountains, underline with a granodirite bedrock. Sandy river bed with

Puerto Rico

Puerto Rico is a Caribbean island located between the Caribbean Sea and the North Atlantic Ocean, east of the Dominican Republic and west of the Virgin Islands. It is about 1,000 miles (1,600 km) southeast of Miami, Florida. Puerto Rico is a self governing unincorporated territory of the United States.

Geographic Coordinates: Latitude: 18 15 N   Longitude: 66 30 W 9,104 sq km (3,515 sq mi)

The maximum length from east to west (from Punta Puerca to Punta Higuero) of 180 km (110 mi) and with a maximum width from north to south (from Isabella to Punta Colón) of 65 km (40 mi).
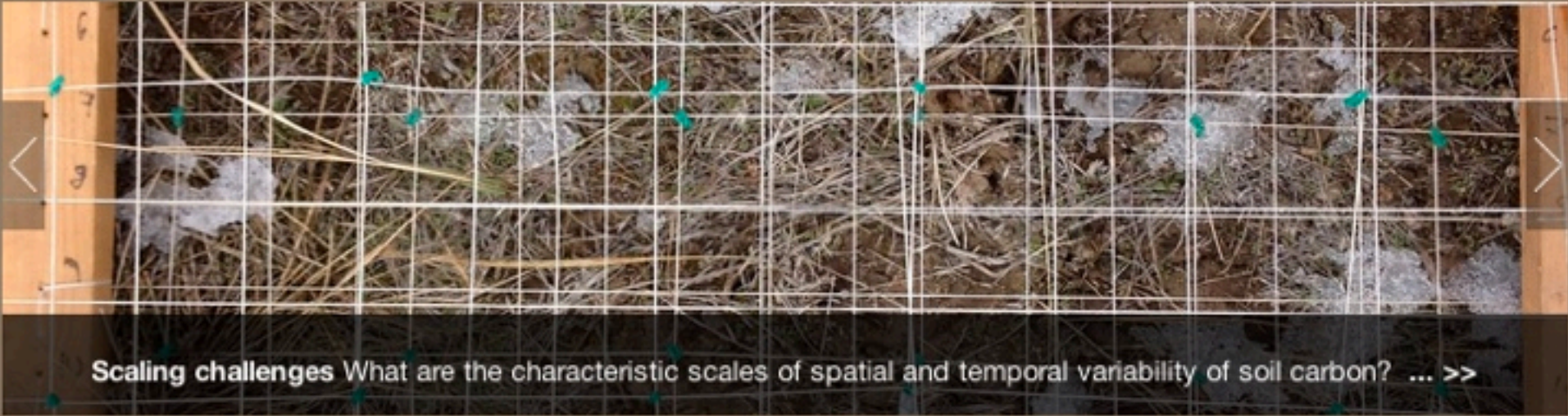

LUQUILLO – Field Areas page

– Say what you need to say, then stop
– Break content into digestible portions
IMAGES: tell the story

This page mixes text and images well. The text is minimal and broken into easy-to-parse pieces, such as the single sentence fragment showing the coordinates.

The map is clear and clearly tells the story of the field locations.

RESEARCH

Scaling challenges What are the characteristic scales of spatial and temporal variability of soil carbon? ... >>

The Reynolds Creek Critical Zone Observatory (RC CZO) is addressing the grand challenge of improving prediction of soil carbon storage and flux from the pedon to the landscape scale.

Most of the world's terrestrial carbon is found in the critical zone, where it is predominantly stored as soil carbon. This important carbon reservoir is sensitive to climatic and land use change and may act as a source or sink for atmospheric carbon dioxide. Despite its importance, soil carbon remains a critical source of uncertainty in both carbon cycling and global climate models. That uncertainty arises due to both an incomplete understanding of the

Objectives of the the RC CZO are the following:

1) Determine the relationship between measured soil carbon storage and the soil environment at high spatial resolution across a broad, regionally significant environmental gradient.

2) Measure net carbon flux in conjunction with components of the soil carbon cycle at the pedon to landscape scale.

3) Evaluate soil carbon model

Reynolds Creek
Critical Zone Observatory
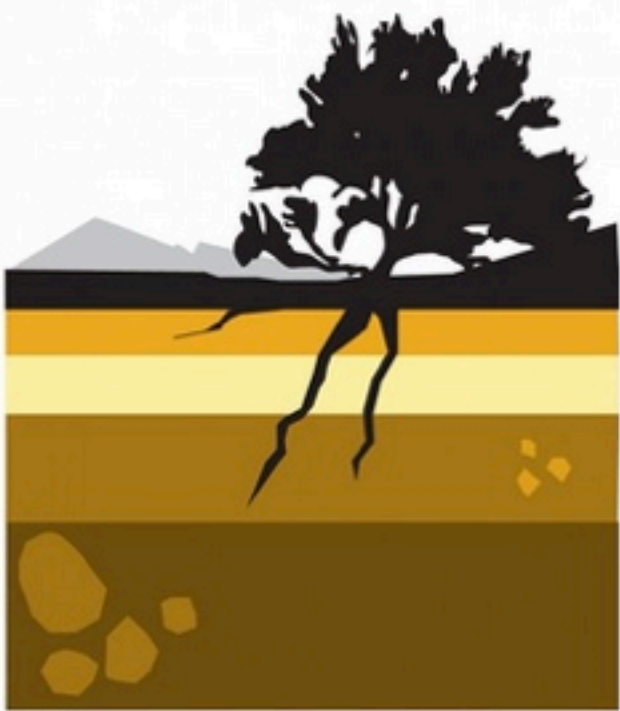
REYNOLDS — Research page

– Say what you need to say, then stop
– Employ useful, consistent headings
– Break content into digestible portions
– Put important stuff first
CRAP: Alignment

This page is super easy to skim. It has the needed text and no more. It starts with a clear summary of what RC-CZO is trying to do. The multiple columns and numbered lists are very helpful for scanning information.

Research Foci

The Reynolds Creek CZO is structured around three main research objectives to address the overarching hypothesis that soil environmental variables (e.g. soil water content, soil temperature, net water flux) measured and modeled at the pedon and watershed scale will improve our understanding and prediction of SC storage, flux, and processes.

- Conduct a Landscape Soil Carbon Survey
- Develop an Environmental Monitoring Network along an Elevation Gradient
- Develop Integrated Models to Test Soil Carbon Prediction

REYNOLDS RESEARCH:

Research Foci ▶
Multiple Disciplines ❯
Cross-CZO Studies ❯

Move laterally: Calhoun | Catalina-Jemez | Christina | Eel | IML | Luquillo | Reynolds | Sierra

Landscape Soil Carbon Survey

- Sample soils along relevant environmental gradients within RCEW to determine soil organic and inorganic carbon distribution

- Analyze and archive soils across Reynolds Creek Experimental Watershed for other CZ properties

CARBON TYPE
- Both
- Inorganic
- Neither
- Organic
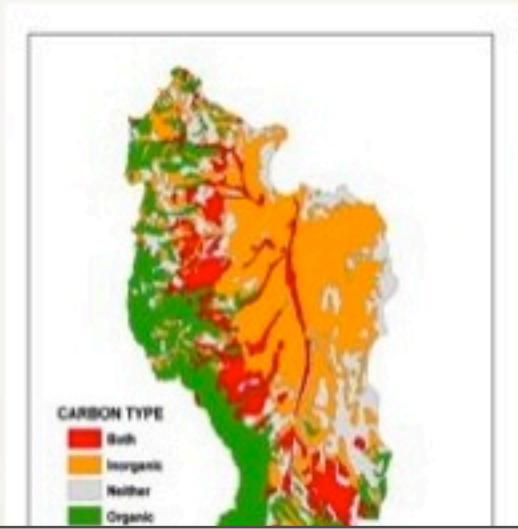
Environmental Monitoring Network

Establish 5 CORE sites along an elevation gradient from 250 mm to >1000 mm precipitation to calibrate Land Surface Ecosystem Models
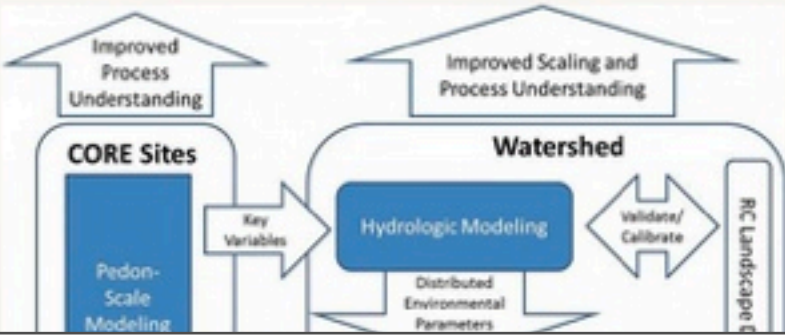
- Net ecosystem exchange using eddy covariance (EC)
- Canopy transpiration and stand water use
- Aboveground biomass and limited net primary production (ANPP)
- Soil organic carbon stabilization/decomposition
- Soil respiration

Exports

- Stream and Groundwater Carbon Export:

Integrated Modeling

- Develop modeling tools and products that convert point climate data to distributed datasets

- Integrate field observational climate and biogeochemical data that represent critical carbon fluxes at pedon to landscape scale.

- Evaluation of conceptual models of soil carbon behavior and associated interactions to promote up-scaling of mechanistic understanding to climate models

Improved Process Understanding | Improved Scaling and Process Understanding

CORE Sites | Watershed
Pedon-Scale Modeling | Key Variables | Hydrologic Modeling | Validate/Calibrate | RC Landscape
Distributed Environmental Parameters

REYNOLDS - Research Foci page

- Say what you need to say, then stop
- Employ useful, consistent headings
- Break content into digestible portions
CRAP: Repetition, Alignment, Proximity

The Reynolds folks continue the style of their Research page onto this Research Foci page. It too is easy to scan (for similar reasons). Since they have three objectives, the 3-column layout works well.

Sample collection about to begin in Shale Hills

SHALE HILLS – News story about student field visit

IMAGES: tell the story

This page is a news story about a student field visit and the screenshot shows the expanded version of one of the smaller images. This is a great photo. It's visually interesting and tells some of the story of the day's visit. It also makes you more curious: What did the students do? What is all the equipment for? How many students can fit in that van?

Move laterally: National | Boulder | Calhoun | Catalina-Jemez | Christina | Eel | IML | Luquillo | Reynolds | Shale Hills | Sierra

Overview

The Southern Sierra CZO is a community platform for research on critical-zone processes across the rain-snow transition in the mixed-conifer forest of the Southern Sierra Nevada. While this elevation range has characteristically rapid seasonal changes, going from snow cover to wet soil to dry soil over a 1-2 month period, climate warming will shift this transition period earlier or eliminate it entirely at the current transitional elevation.

The characteristic spatial differences along gradients offer the opportunity to substitute space for time, making the CZO an excellent natural laboratory for studying how critical zone processes respond to perturbations, and particularly how the water cycle drives critical zone processes.

A team of scientists from multiple institutions are carrying out research at the CZO, which is located in the Kings River Experimental Watershed (KREW), a U.S. Forest Service watershed-level, integrated ecosystem project for long-term research in headwater catchments in the Sierra National Forest.

Current status

A spring storm on April 25-26 brought a couple inches of snow to the Shaver Lake area, near Providence. Web cams are updated every 20 minutes with current conditions at the Shaver Lake Marina. Despite this storm, the winter and spring have been very dry. In mid-March, the Forest Service deemed that burn conditions were already at May/July conditions. Any prescribed burns for the KREW catchments have been postponed until conditions improve The southern Sierra has received less than 50% of long-term average precipitation.

Recent activity at our sites includes the installation of passive dust collectors based on the USGS protocol*. The replacement tower for the Short Hair Creek site is under construction and will be shipped for installation this summer. More pictures have been recently posted from the Clarence Burn, a prescribed burn that reactivated near the Soaproot Saddle tower during very dry January conditions.

The Southern Sierra Critical Zone Observatory was established in fall 2007, under a five-year grant from the National Science Foundation. Support was extended for a sixth year, through 2013. In November 2013, NSF announced that the SSCZO grant was renewed, and four new CZOs were added to the national network. The CriticalZone.org website was recently updated - take a minute to explore the pages for the new CZOs!

SIERRA – Research page

– Write Descriptive Links
CRAP: Repetition, Alignment, Proximity

This page is a good example of links as well as layout. The links are descriptive and consistent. In this case they are all nouns (action phrases can be effective in other cases). None of the links say "click here" or "more information", which provide little sense of where the link goes to and are almost useless to folks with hearing disabilities using an auditory screenreader. The two-column layout and consistent headers fit the two-part content structure perfectly.
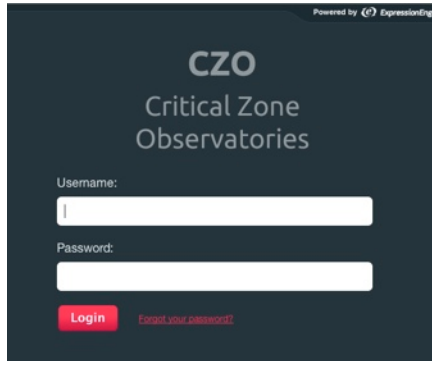
CZO MOVING FORWARD

Content resources available now

Content ideas for the future

How can we help author better content in the short and long term?

Current CZO resources

- CMS Instruction fields

- CMS Content Tips fields

- Video Screencasts

- FAQ document

- Content Writing Tips document

- CZO Design Guidelines Dec 2013.pdf (4 pg)

As part of the launch of the new CZOs this month, we also assembled some documents and guidelines that can help with content. All are available on the CZOData area on Google Drive.

Content Strategy for the Web

Kristina Halvorson and Melissa Rach

Short Book, 2012 Edition (2nd)

http://contentstrategy.com/
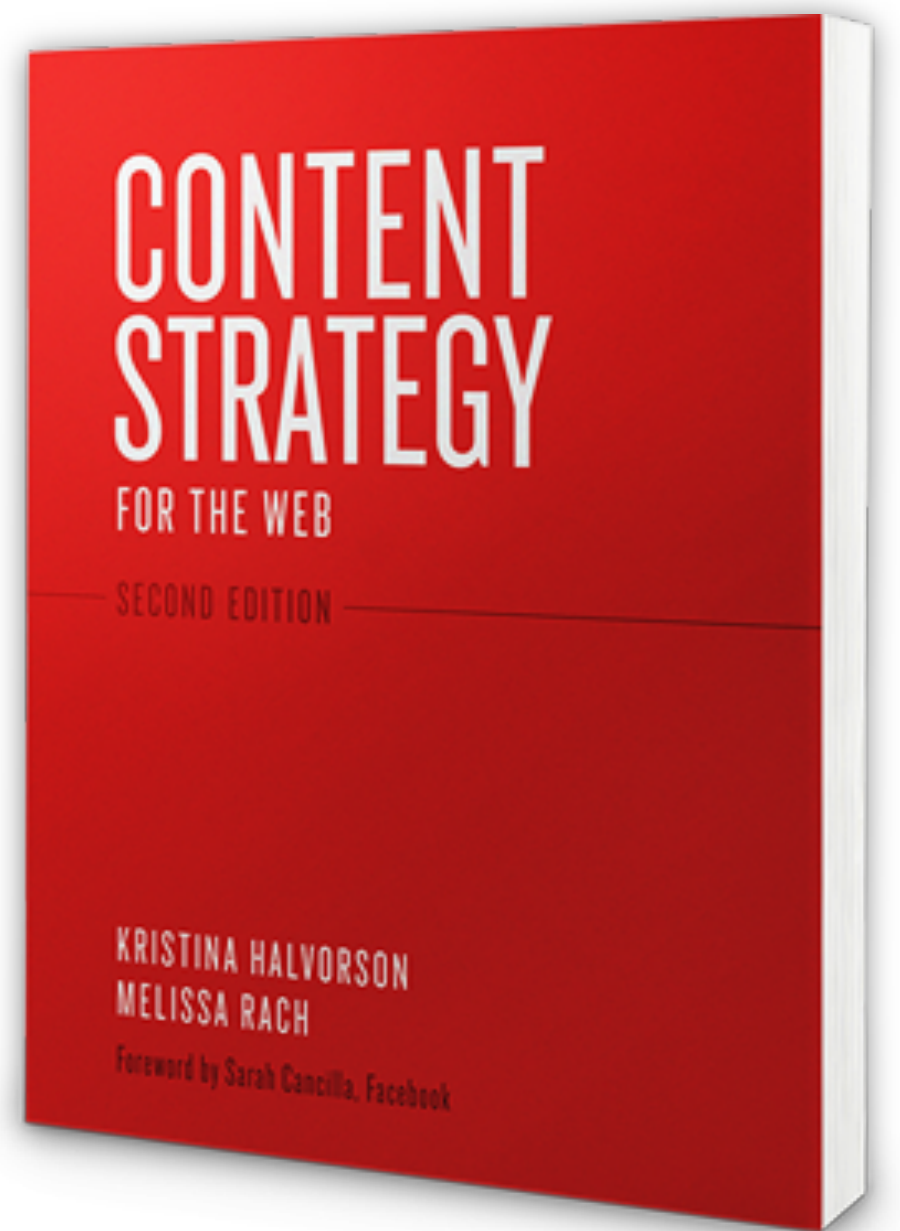
The go-to book for Content Strategy. It's concise and contains many helpful examples.

Writing for the web

Writing for the web

Dalhousie Web Team

8 Web pages

http://www.dal.ca/webteam/web_style_guide/writing_for_the_web.html
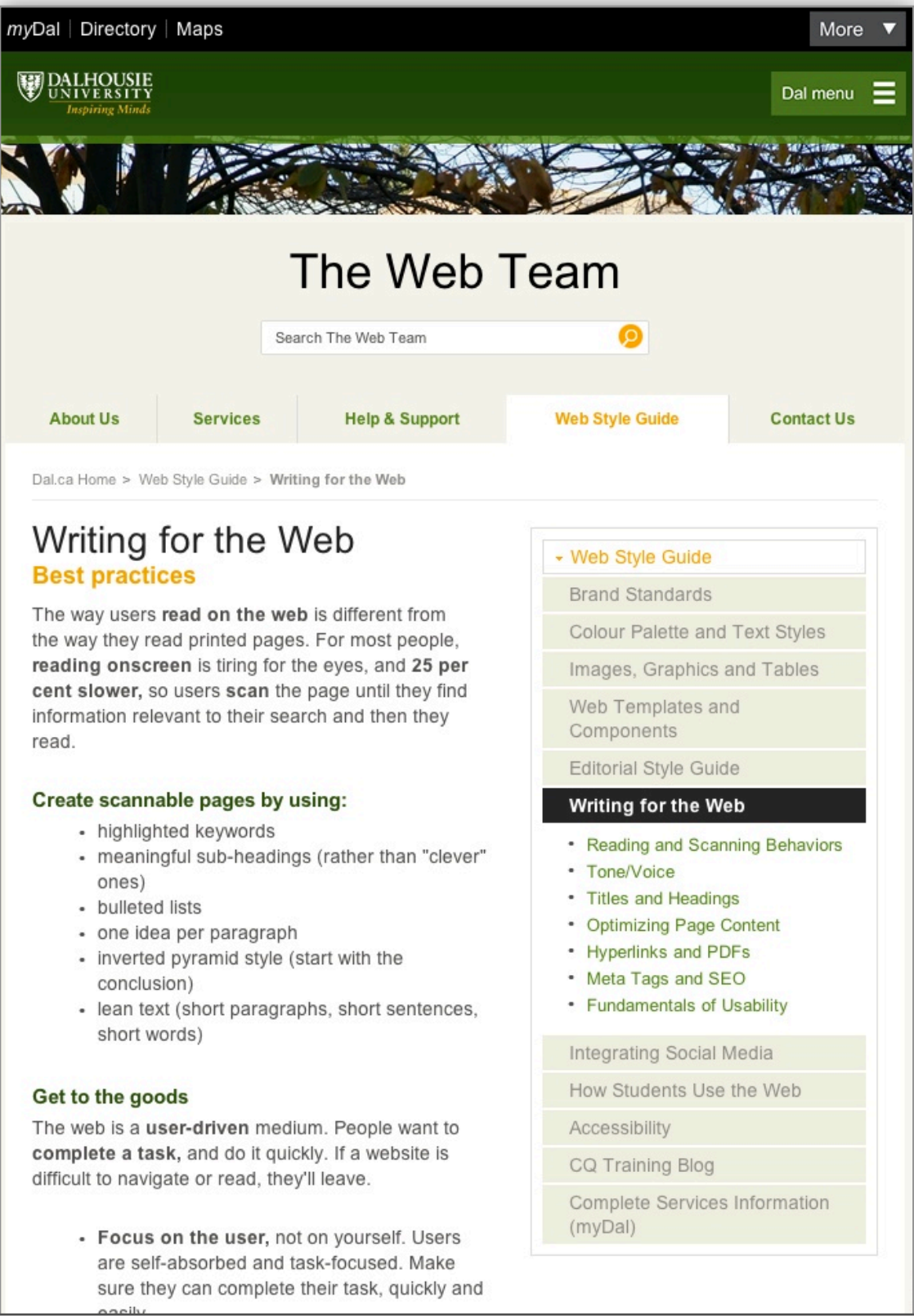
8 skimmable web pages that cover the most important points of web writing.

http://www.dal.ca/webteam/web_style_guide/writing_for_the_web.html
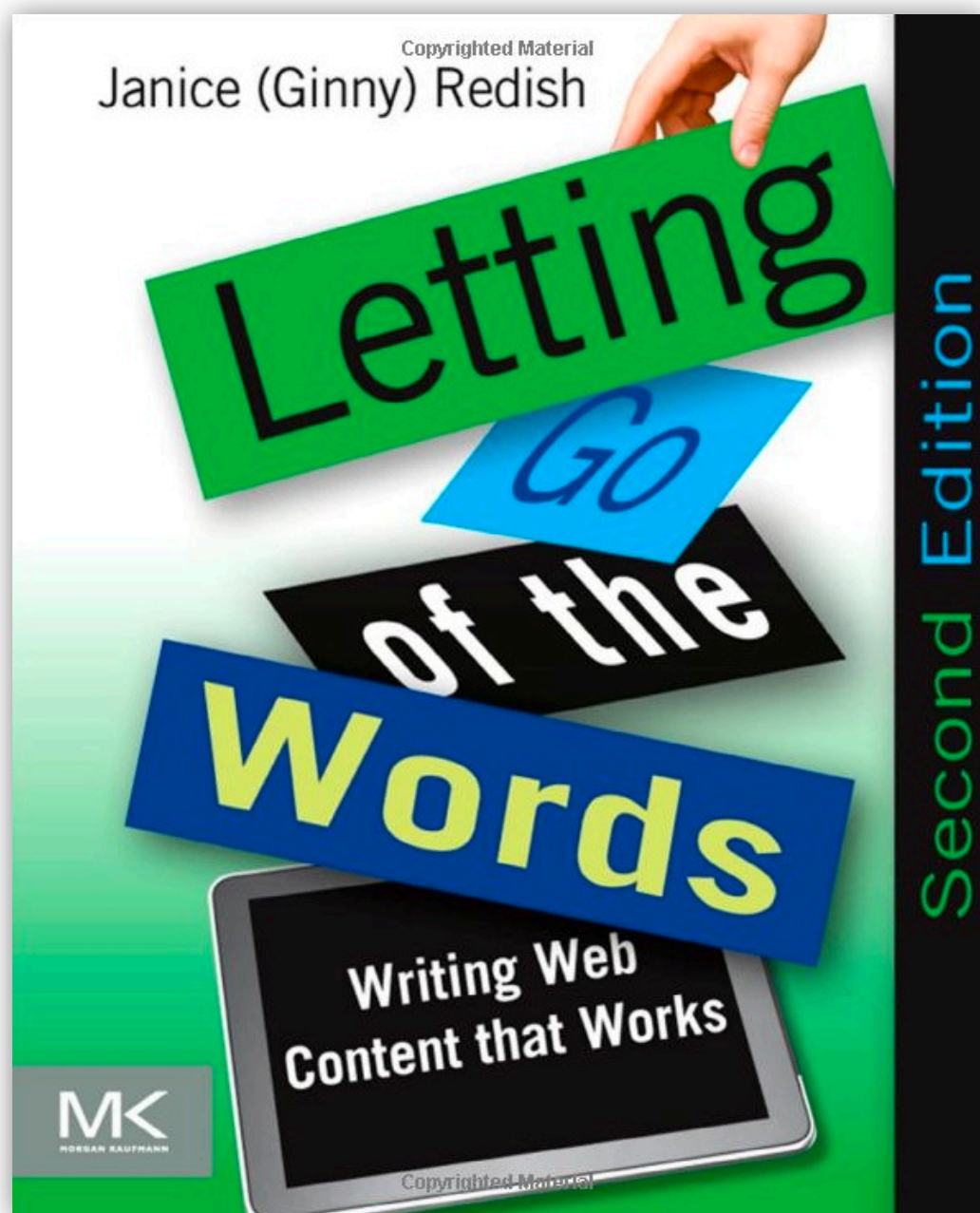
Letting Go of the Words

Janice (Ginny) Redish

Long Book, 2012 Edition (2nd)

http://www.amazon.com/Letting-Words-Second-Edition-Technologies/dp/0123859301/

Want more advice on web writing? This book is comprehensive but easy to read. Ginny Redish is a writing veteran and has been involved in the movement to get the US Government and others to use Plain English.
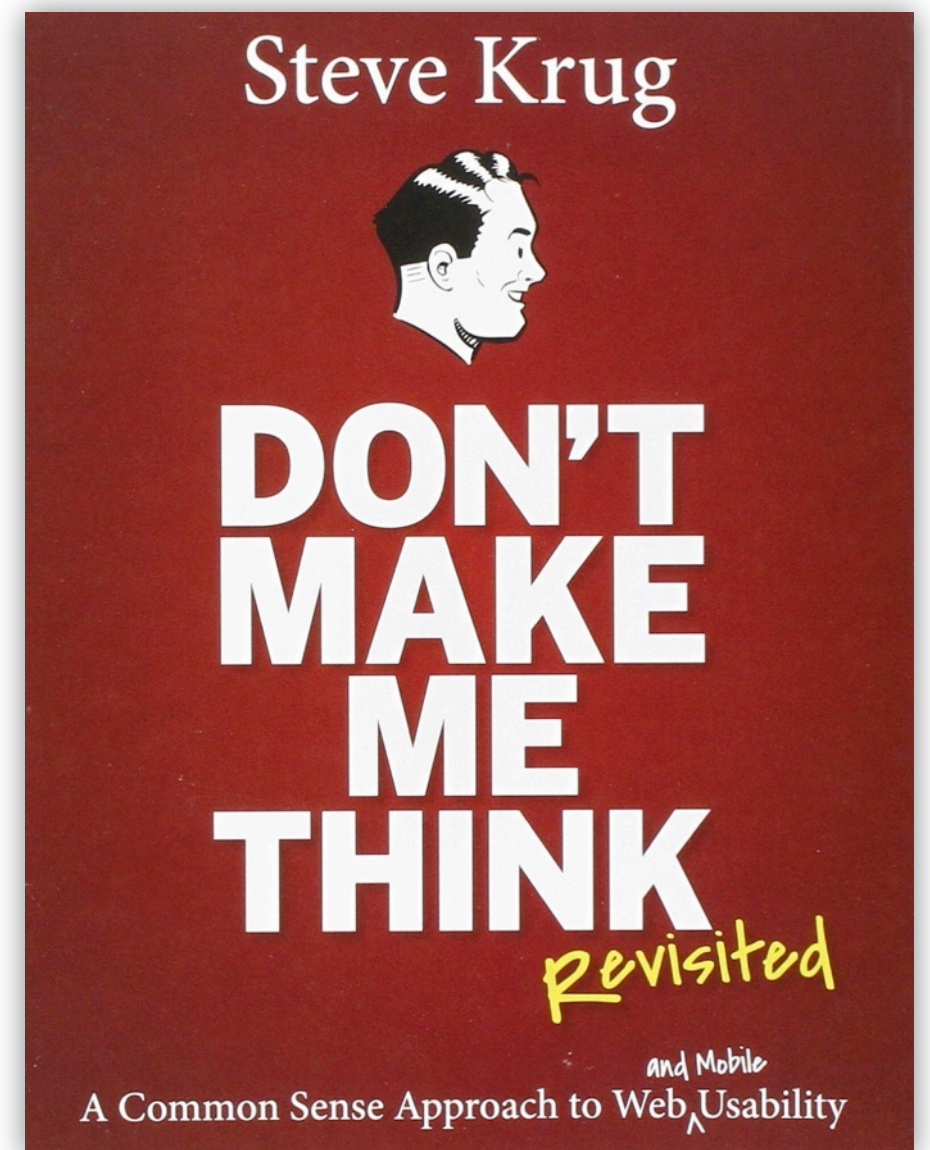
http://www.amazon.com/Letting-Words-Second-Edition-Technologies/dp/0123859301/

Don't Make Me Think, revisited

Steve Krug

Short Book, 2014 Edition (3rd)

http://www.sensible.com/dmmt.html

A witty read with ample illustrations. Plus, it's short enough to be read on a plane flight across the US.

http://www.sensible.com/dmmt.html
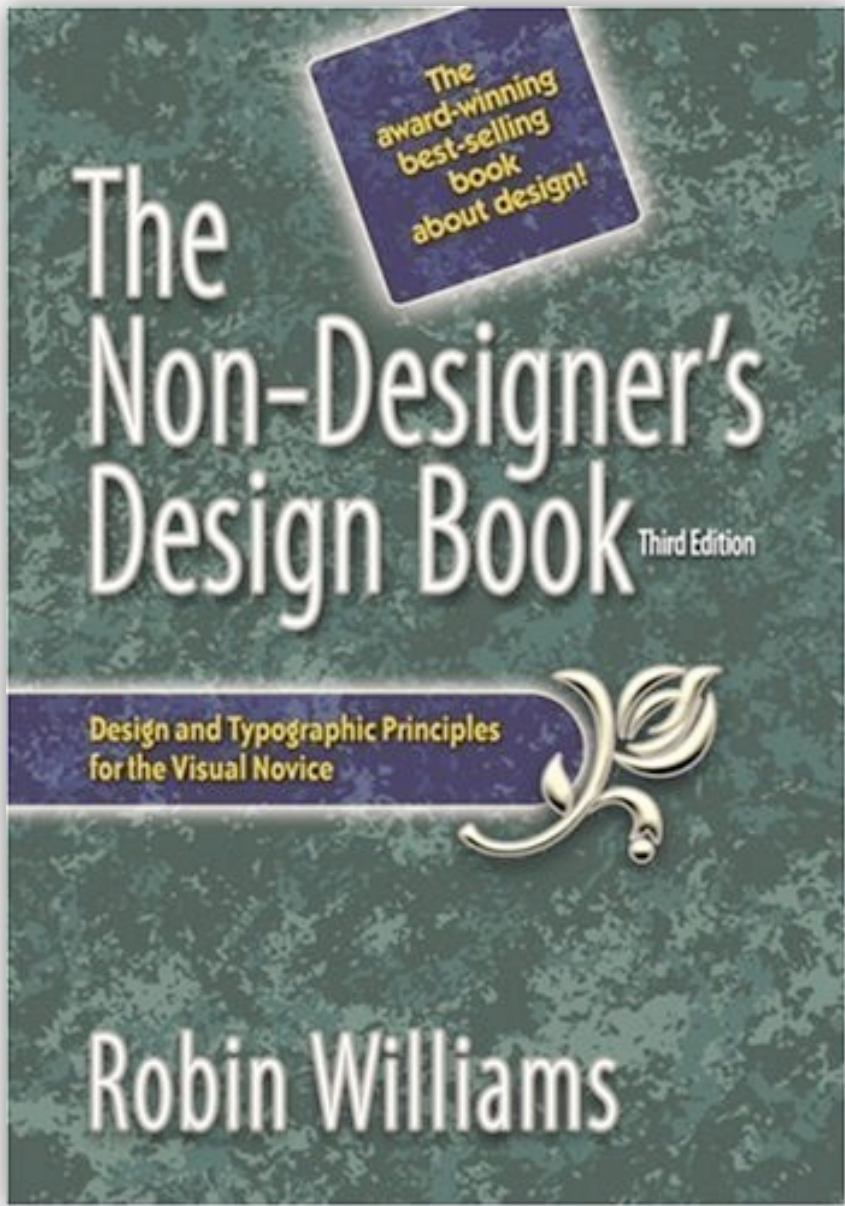
The Non-Designer's Design Book

Robin Williams

Short Book, 2008 Edition (3rd)

http://www.amazon.com/The-Non-Designers-Design-Book-Edition/dp/0321534042/

A great summary of visual design principles. Williams is the first author to write about C.R.A.P. design.

http://www.amazon.com/The-Non-Designers-Design-Book-Edition/dp/0321534042/

Meetings & Discussions?

Online meetings, discussions (ie Google Groups)?

- Easier reporting to NSF?

- Audience, Identity, Messaging?

- Goals? How to define & measure "success"?

- National Office - Person to help with content?

- New content ideas?

Reviews	interviews
Surveys/Polls (including asking audience what they want)	infographics
	videos
Posts about lessons learned	social media
tutorials	

One way to move forward is to discuss content-related topics during our Tues web meetings.
We might also want to try to set up Google Groups for a better discussion forum.
We might also want to consider a full-day guided workshop online or in person sometime.

Revisit Audience, Identity, Messaging.
Discuss goals, success, and metrics in depth for the first time.

Let's consider expanding beyond current content offerings. Some ideas listed above.

Social media?
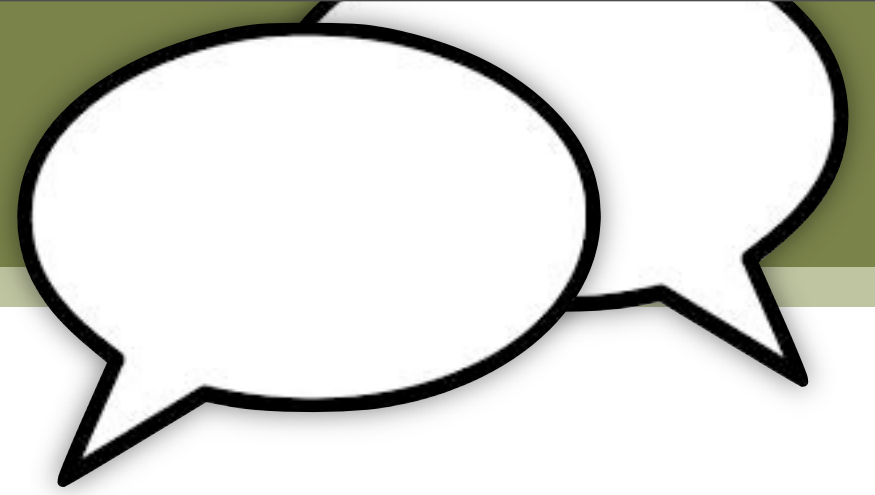
Now
Sierra, Reynolds, IML, Luquillo...
Science & outreach audiences

Future?
Science audiences

Future?
Outreach audiences

We need to move into social media more quickly and across more CZOs. Social media can work well with the website

Pick one social media platform and get good at it first. Then move on to a second social media platform.
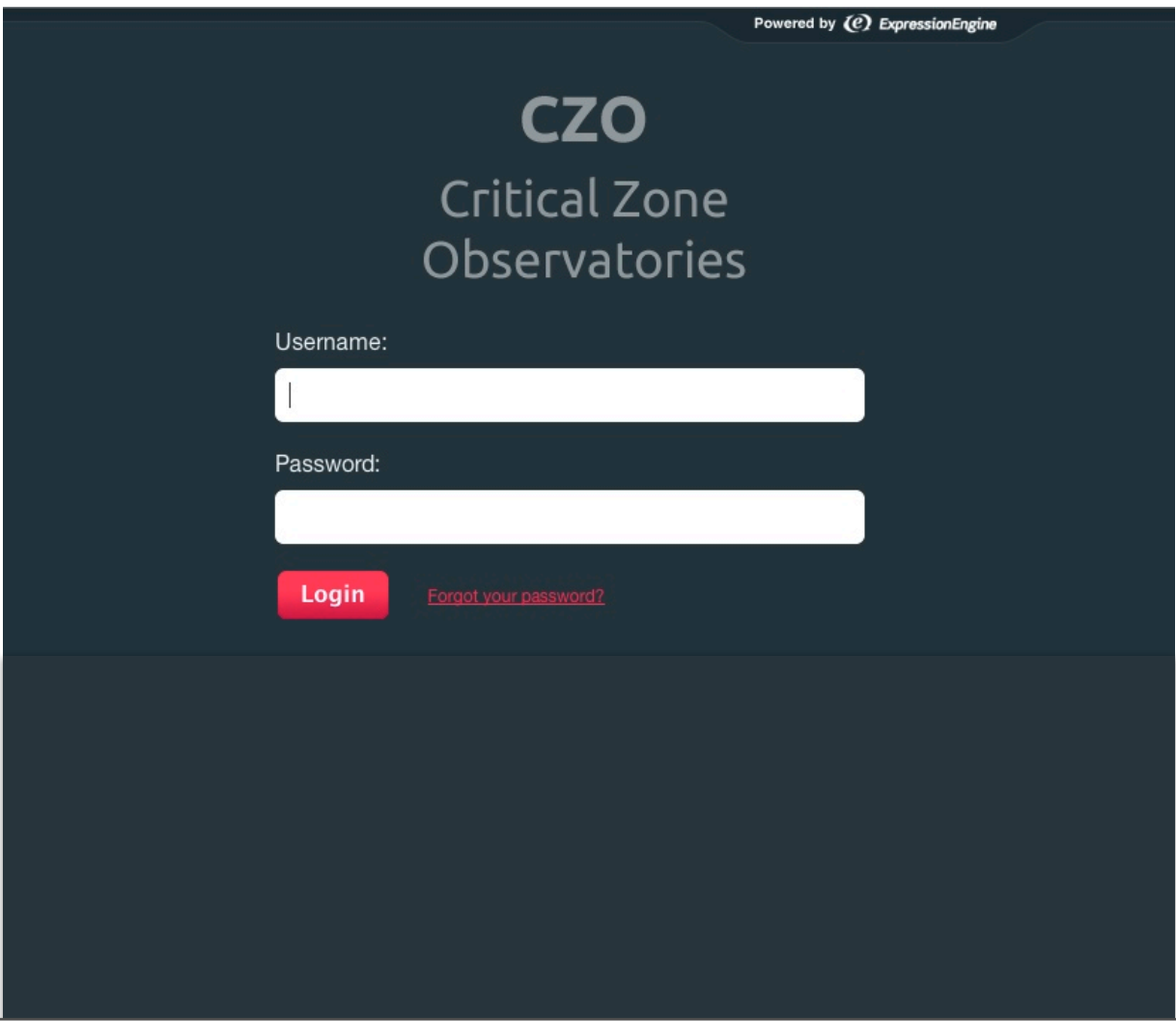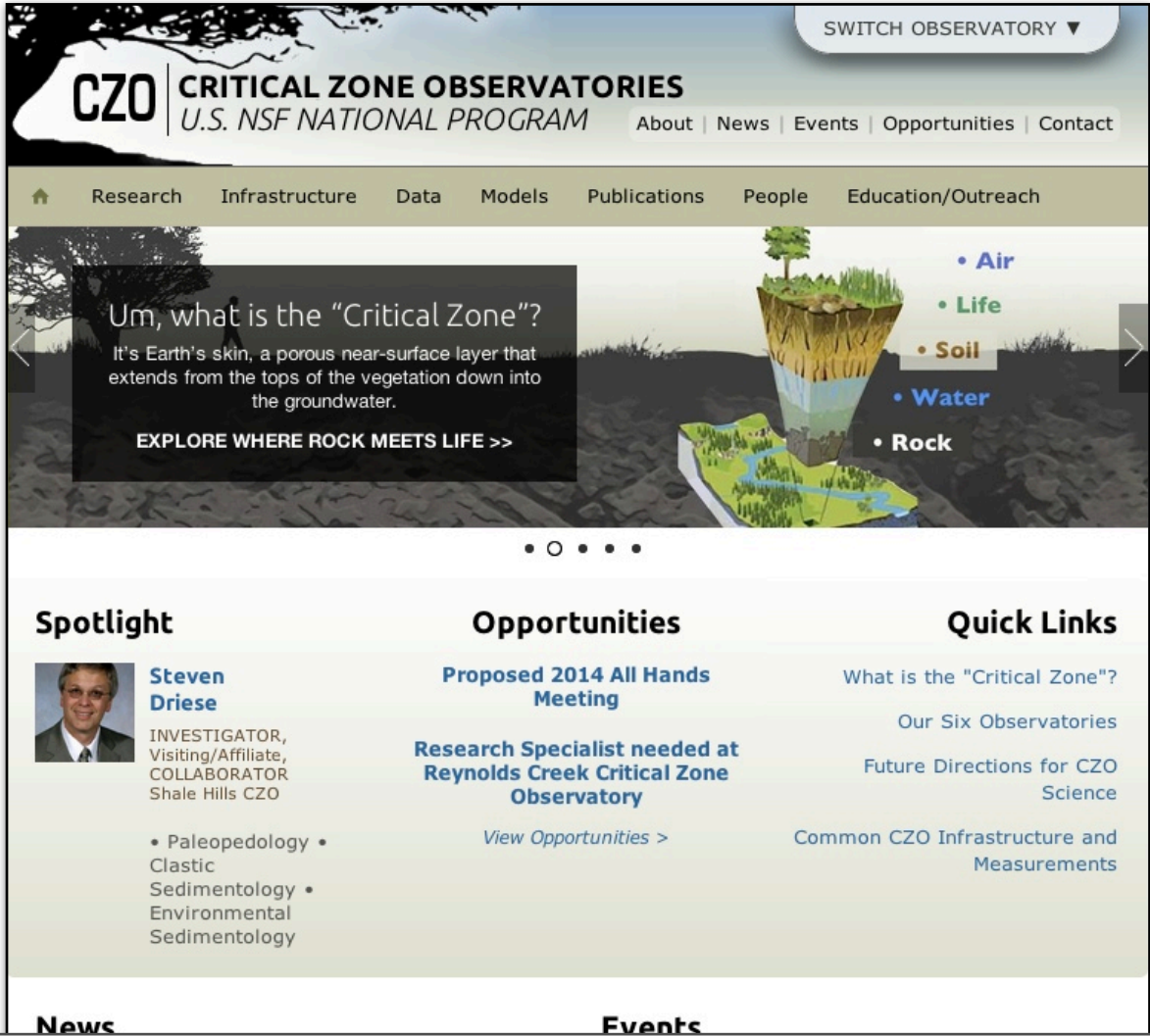
Barbara Burkholder Heitkamp (IML) may provide some leadership around social media .
Erin Stacy noticed that the Wikipedia entries are pretty bad for the Critical Zone and related subjects

CriticalZone.org User's Guide?

ℹ️

One online location for training materials: documentation, screencasts, & discussions

## Communications guide + CMS "how to" guide

We need to find time and resources to create an online User's guide. It's become more important with CZO's growth. Current web editors need occasional refreshers, new editors need an overview and guidance. And a centralized resource could save time across many CZOs.

We can combine existing and new documentation with screencasts, etc. The guide should cover the big picture of content strategy (audience, identity, voice/tone, etc) for the front end of the website as well as the details of how to enter and edit content in the CMS back end.

We can create the guide as web pages and have them accessible at CMS login. Ideally, we'd set up discussions/comments on the same pages.

Thank You!
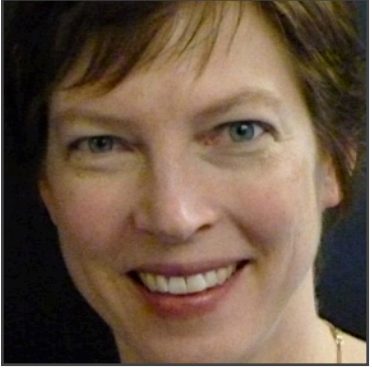
Shelly Sommer
INSTAAR Information & Outreach Director
Shelly.Sommer@Colorado.edu

David Lubinski
CZO Webmaster (part-time)
INSTAAR web designer/developer
David.Lubinski@Colorado.edu

29 April 2014
CZOData Cyber Seminar #7

Guidelines for authoring content
at CriticalZone.org

Thanks everyone for attending. And a special thanks for those who asked questions or gave comments. You can contact our guest speaker Shelly and CZO webmaster David at the above email addresses.