# When It's Not Just Your Opinion: Usability Research for Government Web Managers



Kathy Straub Human Factors International



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## Where we are going ...

- Why worry about research?
  - Emerging best practices
  - Emerging methods
  - Emerging Areas of Interest
- Gathering your own evidence
- Additional Resources

# When you don't leverage research ...



# When you don't leverage research ...



How many of these debates have you had?

How many spaces in a text box?

- How many spaces in a text box?
- Can labels on forms be right aligned?

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- What belongs on the home page?

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- Can we make the text white on a dark ground?
- Where does the primary navigation go?
- What belongs on the home page?
- Bullets, not paragraphs...



# When you do ...



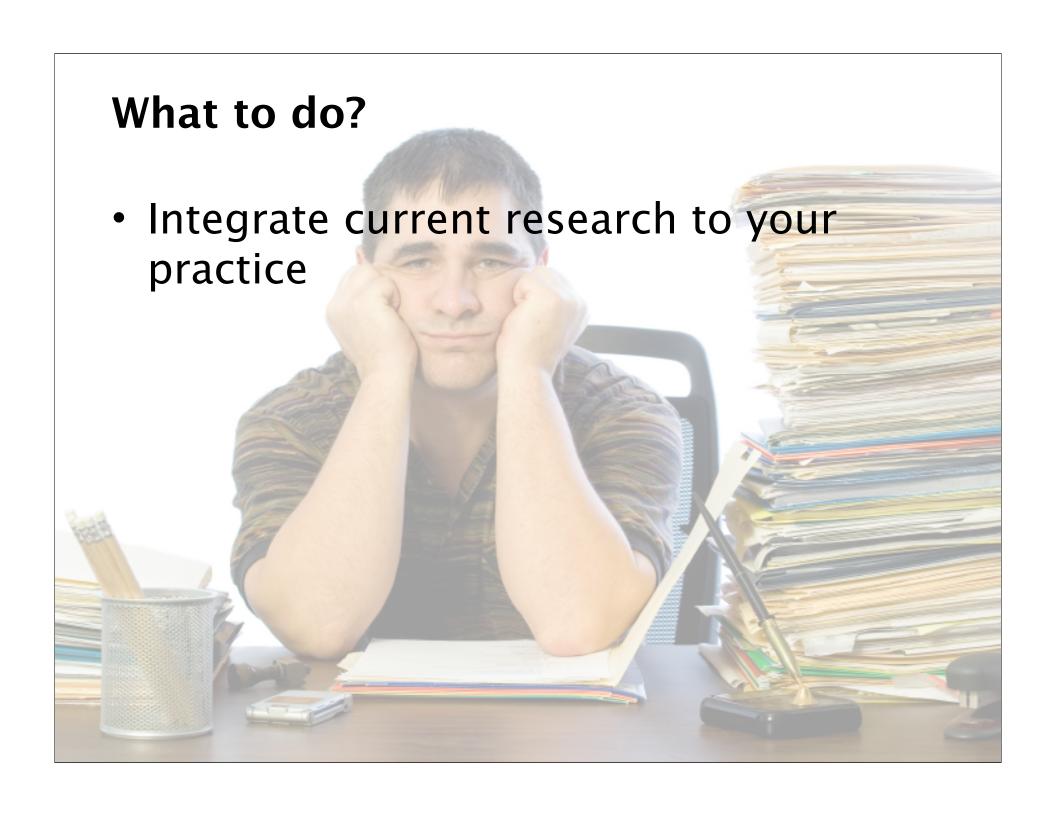
# When you do ... leverage research

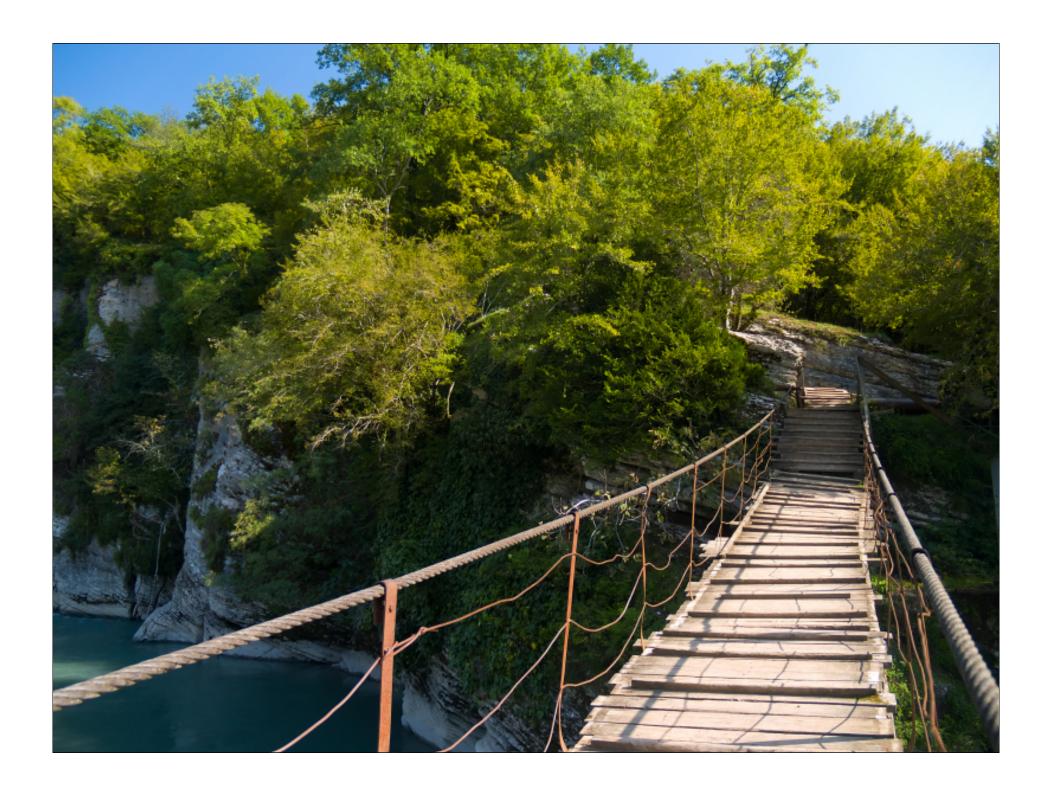
### Webmasters can

- Coordinate site and content strategy
- Drive continuous improvement
- ·Manage (and evolve) the website design
- & standard

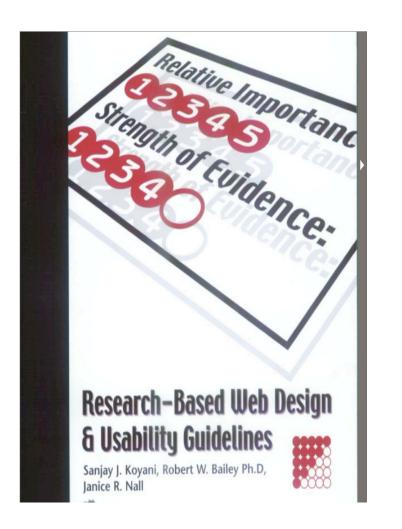
Content experts can design effective content

Developers can implement elegant code





## **Key Resources**





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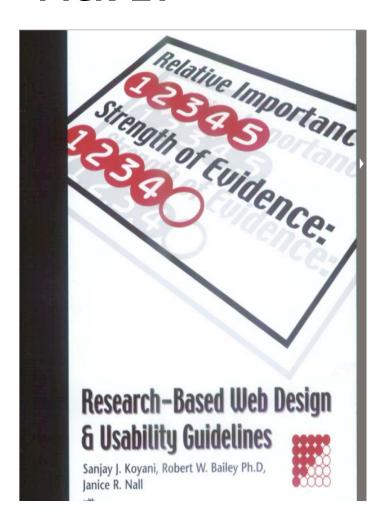
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# Interesting, well-evidenced, actionable. Pick 2?



#### 5 – Strong Research Support 12645

- Cumulative and compelling, supporting research-based evidence
- At least one formal, rigorous study with contextual validity
- No known conflicting research-based findings
- Expert opinion agrees with the research

#### 4 – Moderate Research Support 1234

- Cumulative research-based evidence
- There may or may not be conflicting research-based findings
- Expert opinion
  - Tends to agree with the research, and
  - A consensus seems to be building

#### 3 – Weak Research Support 128

- Limited research-based evidence
- Conflicting research-based findings may exist
   and/or -
- There is mixed agreement of expert opinions

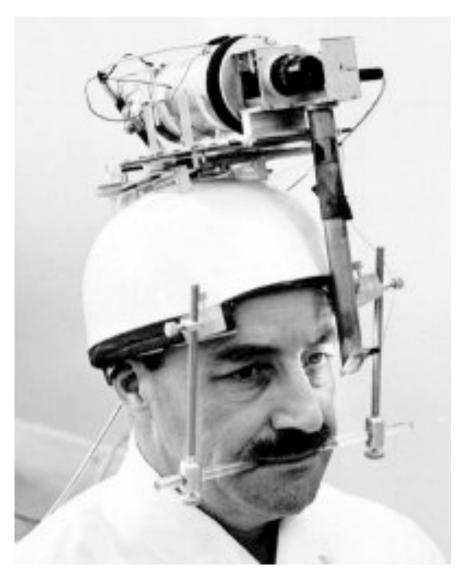
#### 2 – Strong Expert Opinion Support 12

- No research-based evidence
- Experts tend to agree, although there may not be a consensus
- Multiple supporting expert opinions in textbooks, style guides, etc.
- Generally accepted as a 'best practice' or reflects 'state of practice'

#### 1 – Weak Expert Opinion Support

- No research-based evidence
- Limited or conflicting expert opinion

# Research at 'the academy'



## The best evidence ...

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Chapter	Section	Title	Importance	Evidence
1	1:01	Provide Useful Content	5	5
2	2:03	Standardize Task Sequences	4	5
2	2:05	Design For Working Memory Limitations	4	5
6	6:07	Align Items on a Page	4	5
9	9:03	Use Descriptive Headings Liberally	4	5
11	11:01	Use Black Text on Plain, High-Contrast Backgrounds	4	5
12	12:01	Order Elements to Maximize User Performance	4	5
14	14:01	Use Simple Background Images	4	5
14	14:04	Use Video, Animation, and Audio Meaningfully	4	5
15	15:06	Use Mixed Case with Prose	4	5
16	16:04	Group Related Elements	4	5
18	18:01	Use an Iterative Design Approach	4	5
11	11:06	Use Attention-Attracting Features when Appropriate	3	5
11	11:07	Use Familiar Fonts	3	5
11	11:10	Emphasize Importance	2	5
13	13:22	Use Data Entry Fields to Speed Performance	2	5
16	16:09	Use Color for Grouping	2	5
14	14:15	Use Images to Facilitate Learning	1	5



# But, the real world...



# Reality of the world ...



Chapter	Section	Title	Importance	Evidence
1	1:01	Provide Useful Content	5	5
1	1:02	Establish User Requirements	5	4
3	3:03	Do Not Use Color Alone to Convey Information	5	4
5	5:03	Create a Positive First Impression of Your Site	5	4
6	6:02	Place Important Items Consistently	5	4
6	6:03	Place Important Items at Top Center	5	4
8	8:01	Eliminate Horizontal Scrolling	5	4
9	9:01	Use Clear Category Labels	5	4
10	10:01	Use Meaningful Link Labels	5	4
15	15:01	Make Action Sequences Clear	5	4
16	16:01	Organize Information Clearly	5	4
16	16:02	Facilitate Scanning	5	4
1	1:03	Understand and Meet User's Expectations	5	3
1	1:04	Involve Users in Establishing User Requirements	5	3
2	2:01	Do Not Display Unsolicited Windows or Graphics	5	3
5	5:01	Enable Access to the Homepage	5	3
6	6:01	Avoid Cluttered Displays	5	3
13	13:01	Distinguish Required and Optional Data Entry Fields	5	3
17	17:01	Ensure Usable Search Results	5	3
17	17:02	Design Search Engines to Search the Entire Site	5	3
3	3:01	Comply with Section 508	5	2
3	3:02	Design Forms for Users Using Assistive Technology	5	2
5	5:02	Show All Major Options on the Homepage	5	2
13	13:02	Label Pushbuttons Clearly	5	2
16	16:03	Ensure that Necessary Information is Displayed	5	2

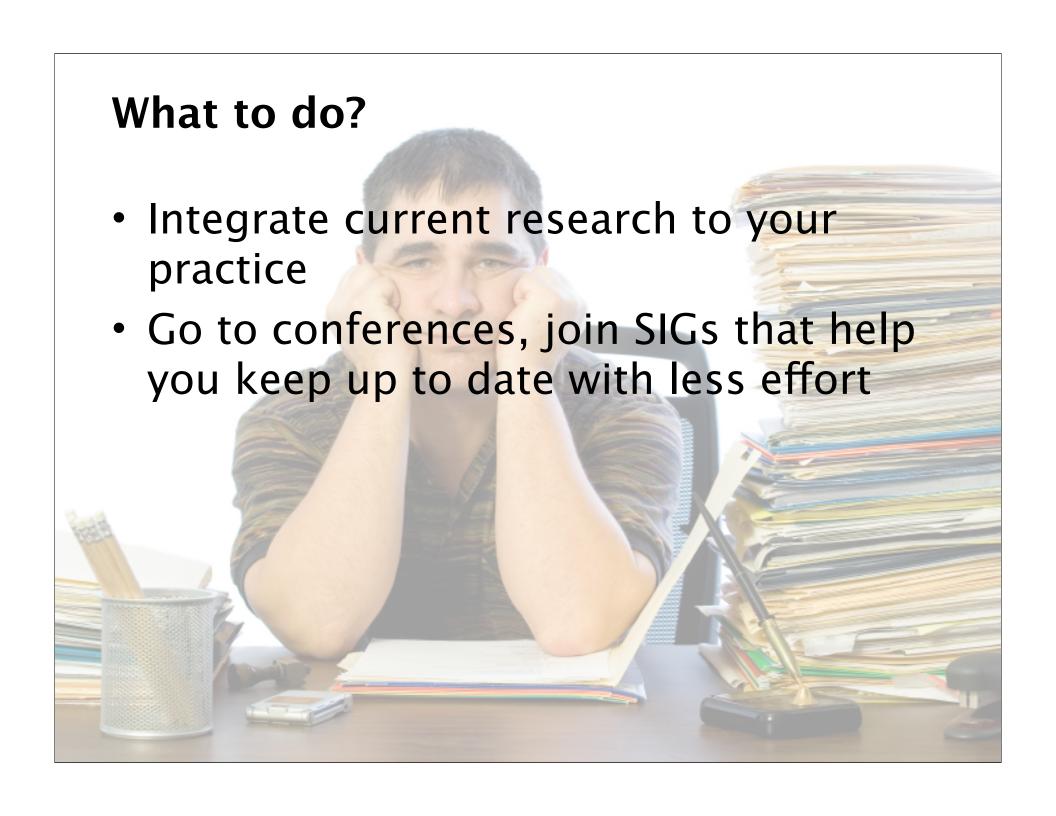












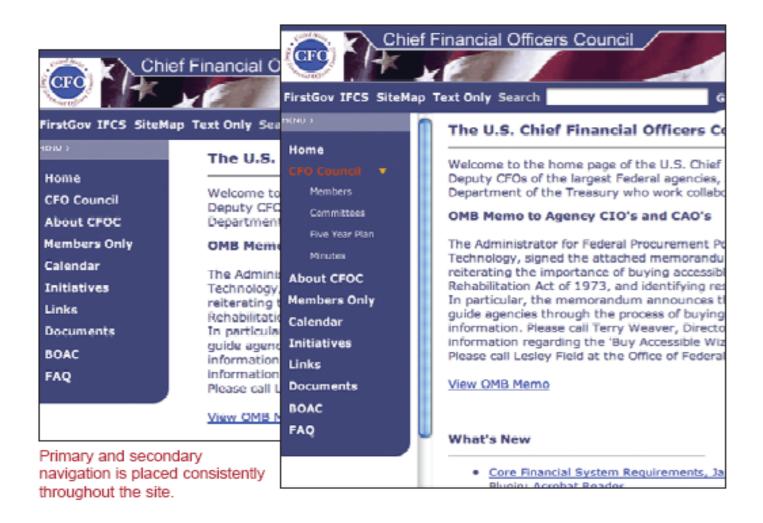
# Research-based Best Practices **Support Visible Search**



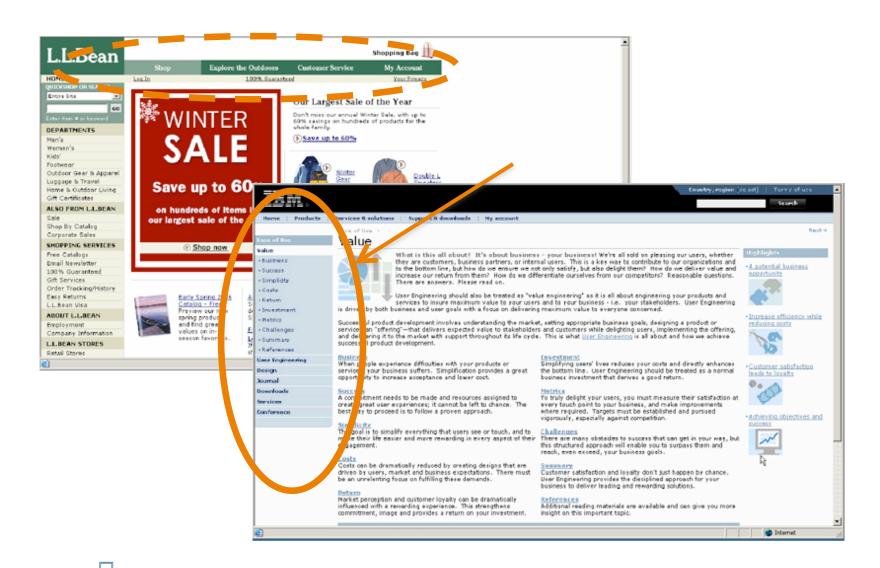


11 spaces

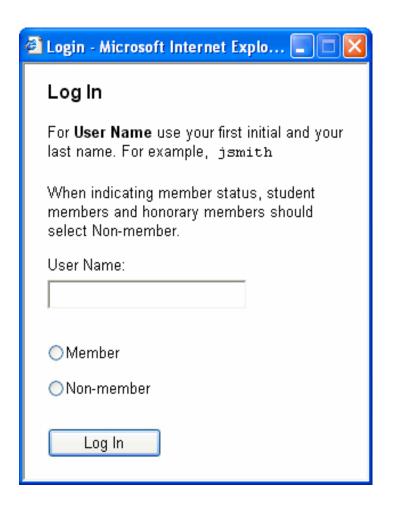
# Research-based Best Practices Anchor Navigation Consistently

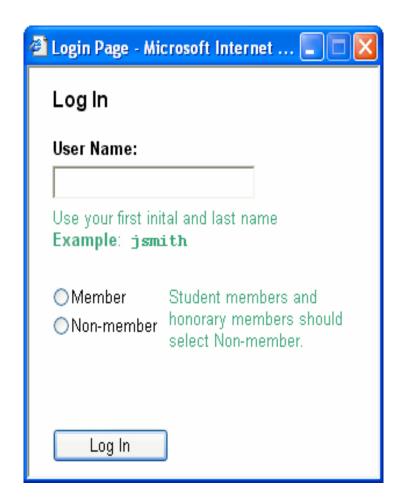


# Research-based Best Practices Anchor Navigation on the Left



# Research-based Best Practices Instruction Placement



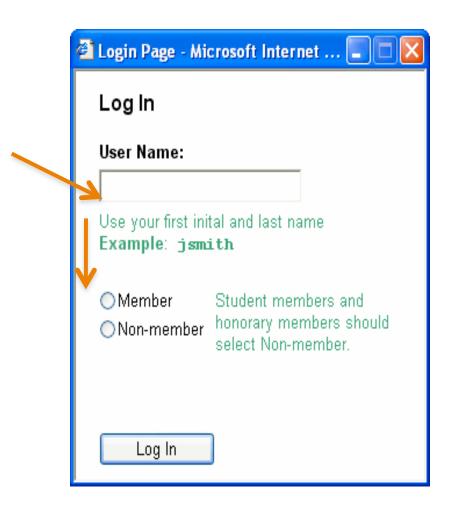


# Research-based Best Practices Instruction Placement

Users want to DO things. They look here first.

Jumping to the text field means they leapfrog over instructional text.

Users don't turn double back, they make a guess and move on.



#### Research-based Best Practices

## **Guidelines for Instructional Text**

- Split instructions by actions
- Put instructions by the thing they apply to
- Place instructions just downstream, to the right or below
- Use a link to a pop-up box when long instructions disrupt the layout of the actions

## Existing Methods | Guerilla Testing

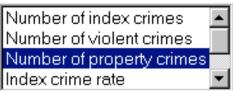
#### Select from each of the drop down boxes below.

(Hold down the control key to select more than one option.)

Choose years to include:

From: 1985 To: 1985

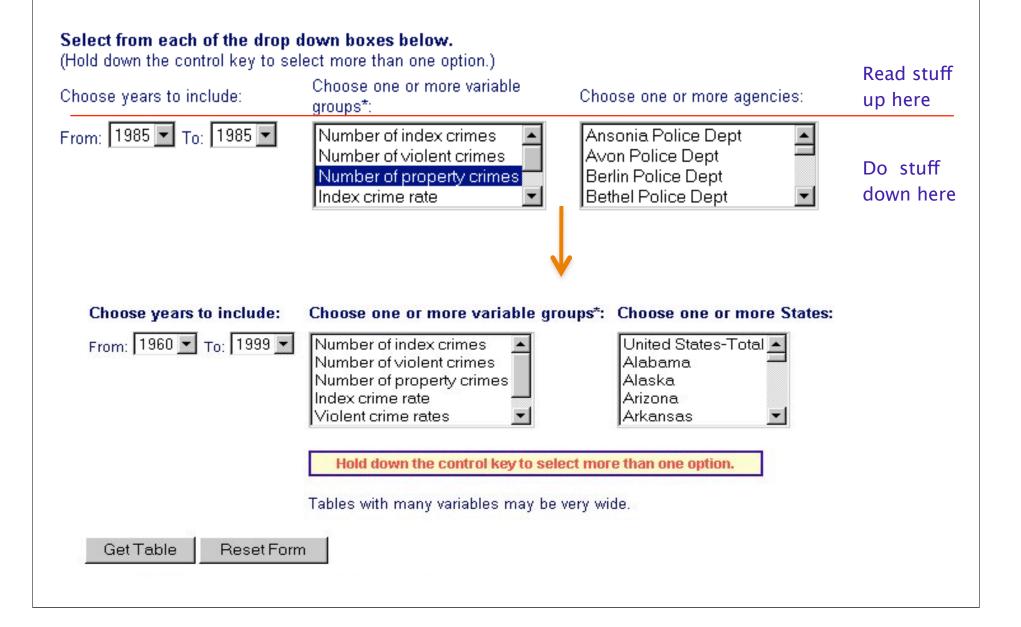
Choose one or more variable groups\*:



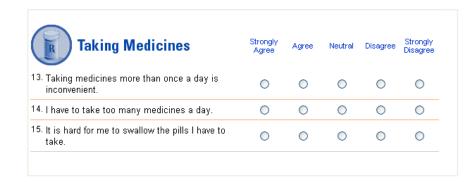
Choose one or more agencies:

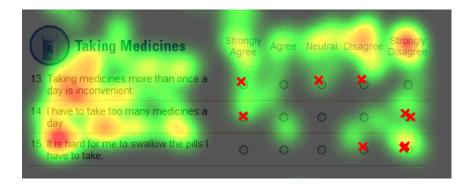


## Existing Methods | Guerilla Testing



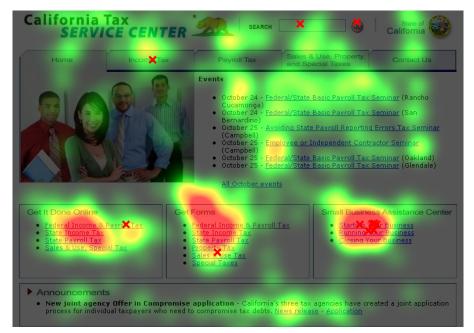
# Emerging Methods | Eye Tracking

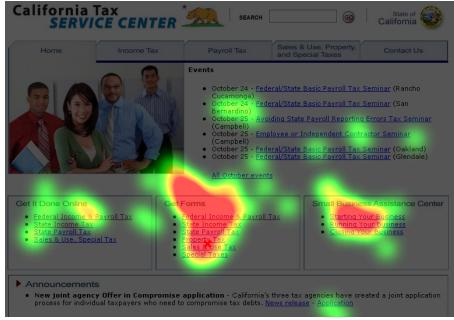




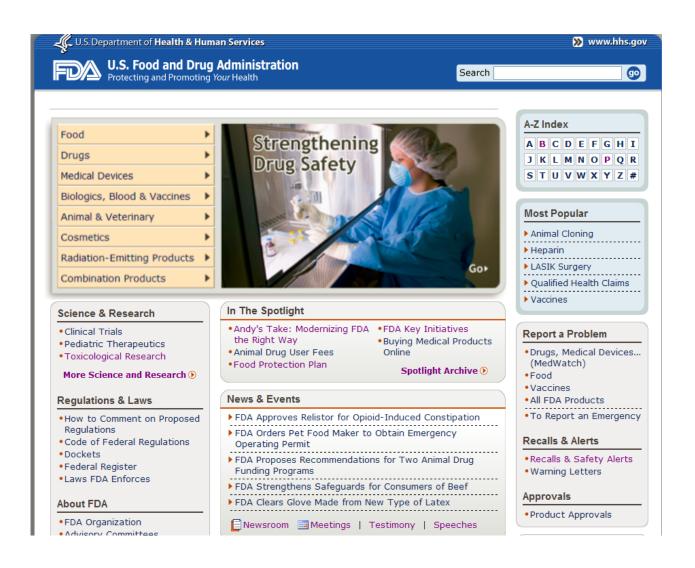


# **Emerging Methods** | **Eye Tracking**

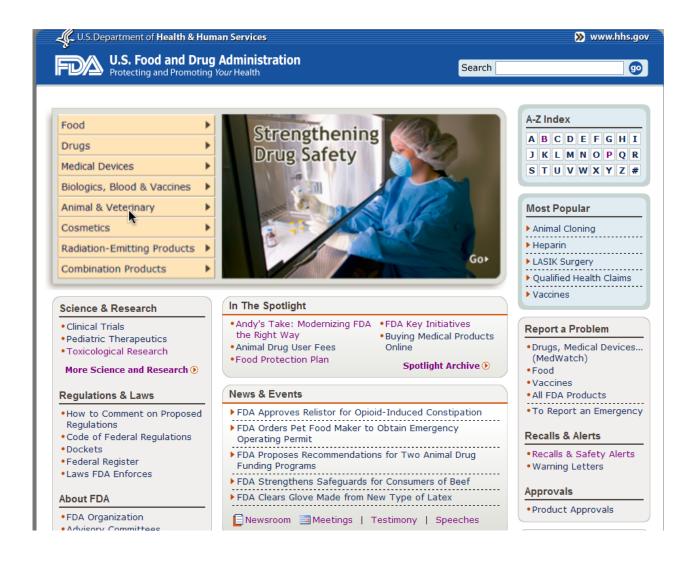




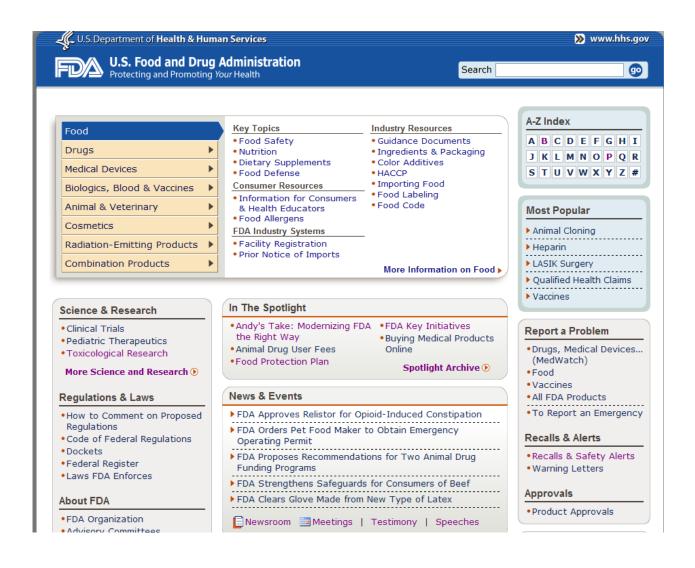
# Research-based Best Practices Progressive Layering

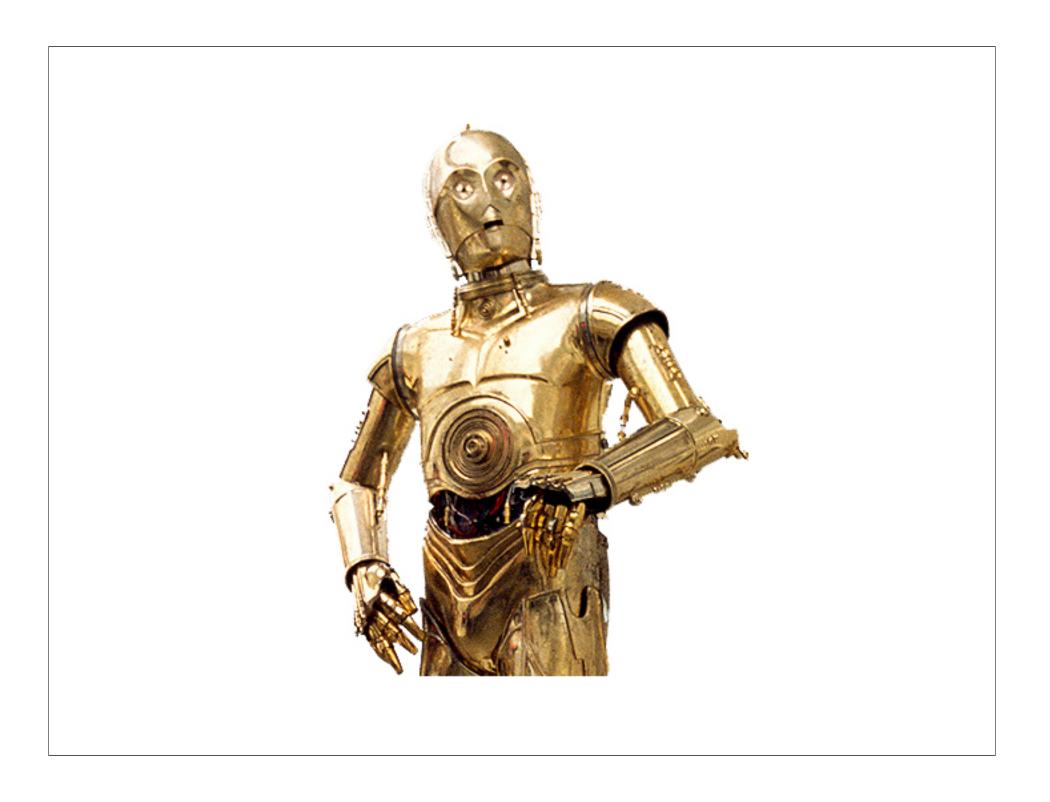


# Research-based Best Practices Progressive Layering



# Research-based Best Practices Progressive Layering





# Emerging AOIs Emotion in Government?

- Do users judge sites by their covers?
- How long does it take to judge a site?
- What does that judgment influence?
- Can first impression determine success?

# **Emerging AOIs Emotion matters**

- First impression is emotional
- First impression happens within 50ms
- First impressions influence
  - Content Value Judgments
  - Credibility
  - Perceived effectiveness of sites



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- Surveys, Reports and Research
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### Consumer Corner



#### Welcome to Consumer Corner!

Consumer Corner is for the public and educators who work with them, and is a sub-site of the Food and Nutrition Information Center (FNIC). Our goal is to help you find information on food and nutrition topics consumers most frequently ask about and link you to the most trustworthy and up-to-date information from both government and non-government sources.

#### Navigating Consumer Corner

To find information in Consumer Corner, use the menu box on the right. (The left-side menu takes you to the main FNIC web site, which is primarily for professionals.) To find the best consumer-friendly information, we recommend staying within Consumer Corner using the right side menu topics.

If you want more technical information, use the "I Want To...See Professional & Other Resources" link on the right side of selected topic pages. This will take you to the main FNIC web page containing professional-level information on this same topic.

### All About Food

More (b)





Get resources on cooking, recipes and food storage. Find food facts and history, including definitions of food and cooking terms. Want to learn the carbohydrate, fat, vitamin, mineral or calorie content of a food? Check out our section on nutrition composition.

### Eating for Health

More (b)





Get smart about balanced eating, Find nutrtition resources on medical and health conditions like food allergies, diabetes, and heart disease. Learn about weight control. Explore information on fiber, vitamins, minerals and other nutrients. And learn how to evaluate the health information you find

### Consumer Corner

- All About Food
- Eating for Health
- Ages & Stages
- o DIY Do It Yourself
- Can't Find What You Want?





### Media Help

To view PDF files you must have Adobe Acrobat Reader installed on your computer.

To view Flash files you must have Macromedia Flash Plaver installed on your computer.



### U.S. Food and Drug Administration



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### Consumer Health Information

### Consumer Updates All Consumer Updates »

SEARCH Consumer Updates by title, topic, or date.





blood pressure, increasing their risk of stroke, heart attack, heart failure, kidney failure ... FULL STORY »

Medications for High Blood Pressure

Food Label Helps Consumers Make Healthier Choices

Pet Turtles: Cute But Contaminated

#### Top Consumer Updates as of April 25, 2008

New Type of Latex Glove Cleared

Strengthening Beef Safety

Use Eye Cosmetics Safely

Salmonella Illnesses May be Linked to Recalled Cereal

Find the Latest Drug Product and Safety Information

A Guide to Drug Safety Terms at FDA

Civil Penalties Sought Against Maker of Hearing Aid

Warning About "Total Body" Liquid Supplements .....

Problems Digesting Dairy Products?

Taking a Close Look at Ultrasound

..... Avoid Fetal "Keepsake" Images, Heartbeat Monitors ......

Getting Up to Date on Glucose Meters

FDA 101: Medication Errors

Internet Drugs Falsely Claim to Prevent, Treat STDs

All Consumer Updates »

#### **Key FDA Initiatives**

- FDA's Food Protection Plan
- Generic Initiative for Value and Efficiency (GIVE)
- All Key Initiatives

### Subscribe to Consumer Updates

Receive via e-mail

RSS Receive via RSS feed (What is RSS?)

#### Content Collaboration

Integrate Consumer Updates into your program, publication, or Web site. Ask how ...

consumerinfo@fda.hhs.gov

### Contact FDA

- E-mail Consumer Update questions, comments, or story ideas
- Find your local FDA office

### Consumer Health Information by Topic

- Consumer Information A-Z
- Frequently Asked Questions

#### Protect Yourself

- Beware of Health Fraud
- Evaluating Online Health Information
- Buying Medicines Online

#### Report a Problem

- Medical Products (MedWatch)
- All FDA-Regulated Products

#### Food and Nutrition

- Spot the Block: Nutrition Label Education for Tweens
- Produce Safety
- The Dangers of Raw Milk
- Selecting and Serving Seafood Safely
- Food Safety for Moms-to-Be

#### **Animal Health**

- Pet Food Recalls
- Pet Turtles and Salmonella
- NSAIDs for Dogs

### Consumer Health Information by Audience

- Women's Health
- Seniors
- Teens
- Kid's Page
- Español

## **Emerging Best Practices | First Impressions**

## Characteristics are visual

- Well designed
- Interesting
- Good use of color
- Good layout
- Imaginative
- Clear
- Simple

### **Bottom line:**

- No matter how good the design/ interaction, you must make sure the first impression is positive
- Test via bakeoffs

Will do?

Can do.

# Emerging AOIs Motivation & Content Design





drivers



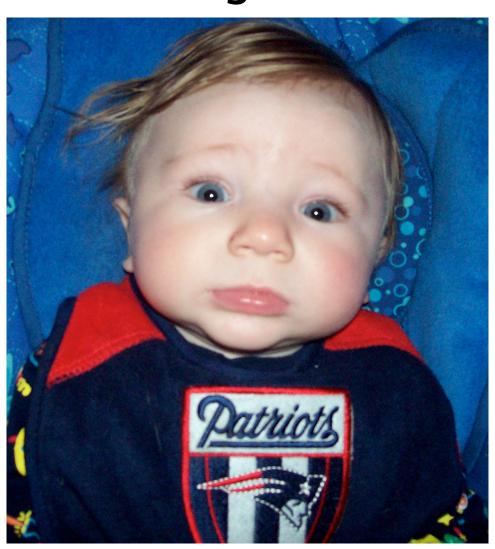
target actions



blocks

# Emerging AOIs Motivation & Content Design





# Emerging AOIs Motivation & Content Design



Get kid health again Reduce anxiety



**Target Action** 

Find what it is Find what to do



Credibility Trust Usability

Fear Distraction



**OUTBOUND STATE: Unchanged** 

## **Emerging AOIs**

## **Motivation & Content Design**



Get kid health again Reduce anxiety

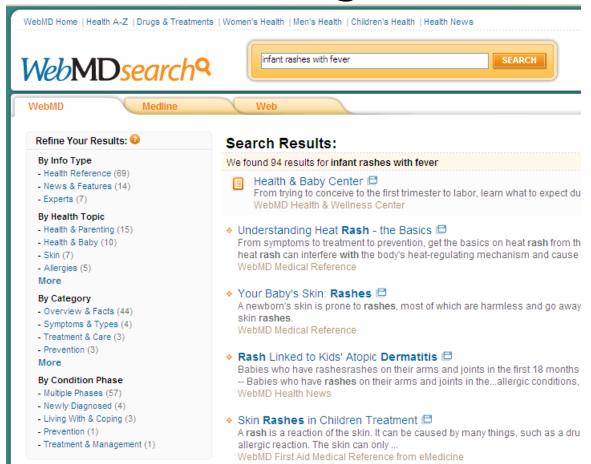


Find the right info



Fear Distraction

Lack of confidence



**OUTBOUND STATE: Engaged, confidence increasing...** 

# Emerging AOIs | Motivation & Content Design | Lome > Children's Health Guide



Get kid health again Reduce anxiety



**Target Action** 

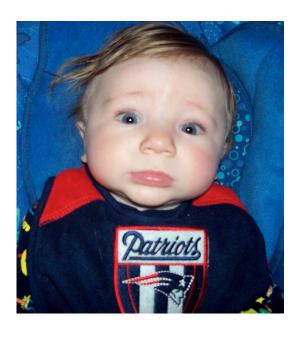
Find what it is Find what to do





OUTBOUND STATE: Increased anxiety, but concrete call to action, motivated to research further

# **Emerging Methods** | **Analytics**









## **Emerging AOIs**

## Text formatting influences comprehension





Avandia and the FREE I Can support program can help you manage your type 2 diabetes.



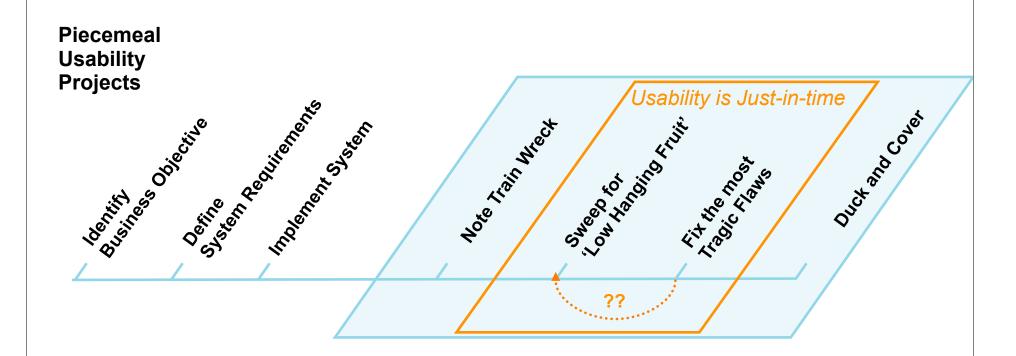
Avandia and the FREE I Can support program can help you manage your type 2 diabetes.

VS.



- Integrate current research to your practice
- Go to conferences, join SIGs that help you keep up to date with less effort
- Develop a continuous evaluation/ improvement plan for your site(s)

## How it often works



## How it could work: Iterative design

### Step-by-Step Usability Guide



- . Think About the Process
- · Develop a Plan
- · Assemble a Project Team
- And more...

### Analyze

- · Learn About Your Users
- Conduct Task Analysis
- · Develop Personas
- And more...

## Design

- . Determine Site Requirements
- · Write for the Web
- Use Parallel Design
- And more...

### Test & Refine

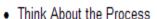


- Conduct Usability Testing
- · Analyze Results
- · Prepare Test Report
- And more...

# How it could work: Iterative design

### Step-by-Step Usability Guide





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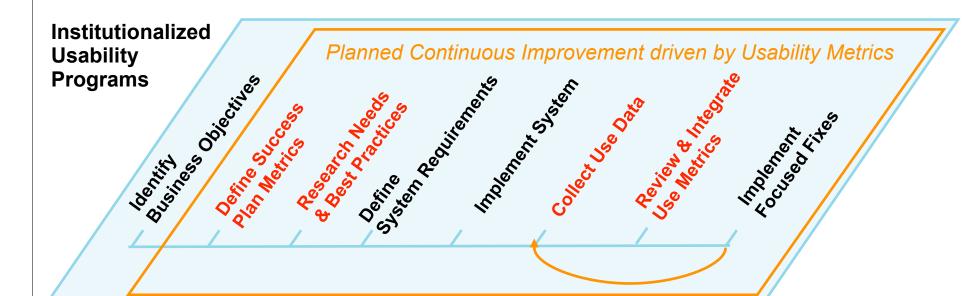
- Analyze Results
- Prepare Test Report
- And more...



## Some methods to evaluate and trend

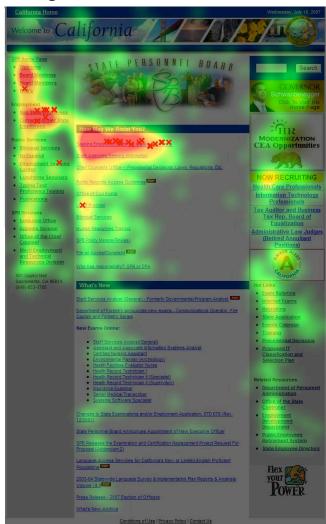
- User research / Persona development
- Survey
- Usability Testing
- Web Analytics

## How continuous improvement happens ...



# Impact: Improved citizen experience

Original Site - State Personnel Board Redesign



Usability Findings: Test - Retest



# Impact: Improved citizen experience

Original Site



Redesign



Usability Findings: Test - Retest

Original SPB Site		HFI Redesign	
Succeeded	29%	Succeeded	100%
Gave up	71%	Gave up	0%



## The commercial world gets it ...





February 2008 "Customer Experience Spending Intensifies In 2008"

## What to do?

- Integrate current research to your practice
- Go to conferences, join SIGs that help you keep up to date with less effort
- Develop a continuous evaluation/ improvement plan for your site(s)
- Think about how to engage others in your agency ... they may not be as excited as you are (yet).
- Ask questions

# Defining Usability Objectives | Efficiency

- 95% of typical users complete tasks in < 3 minutes [Find a clinical trial.]
- 90% of users find specific information in < 30 seconds
  [What are the risks related with taking aspirin?]</li>
- 98% can find a particular report in < 45 seconds [Cancer mortality in the U.S.]
- Task completion time task will be 10% on the new site than on the old site. [Make an airline reservation.]

## Defining Usability Objectives | Navigation Accuracy

 80% of users complete tasks with no navigation errors

[Purchase 100 shares of Cisco stock]

- < 10% of clicks will be "garden paths"</li>
- 95% of users recover within two clicks

## Defining Usability Objectives | Learnability

- 90% of users will understand how to use a site after 1 web-based training session [Use a genealogy website to find their ancestors]
- 80% of new users can complete a task after reading on-page instructions
  [Order a prescription drug over the Web]

# Defining Usability Objectives | Satisfaction

• 90% of usability test participants rate the new site superior to the existing website

 90% of highly experienced users rate the new site "easier to use" than the current site