

GUIDELINES ON ACCESSIBLE VISUAL DESIGN

Prepared by:

Michael Wayne Harris, YC '09

Jennifer Kirby

Agenda

- Headings and Layout
- Color
- Text
- Links
- Images / Videos / Animations
- Q&A

HEADINGS AND LAYOUT

Headings

The screenshot shows the Triangle UXPA website. The header includes the logo, a 'Login' button, and a search bar. The navigation menu has links for Home, Events, Jobs, Mentoring, Blog, Join, and About. The main content area features three sections: 'New 2017 Events from Triangle UXPA!', 'Karen Holtzblatt and The Women in Tech Project', and 'About Triangle UXPA'. The 'Join the Triangle UXPA' section is also visible on the right.

H1 New 2017 Events from Triangle UXPA!

We are continuing to offer more awesome events this year. Mark your calendars for the events below and stay tuned for new event announcements!

H2 Karen Holtzblatt and The Women in Tech Project

March 29, 2017
6:00 - 8:00 pm at the American Tobacco Campus in Durham

The Triangle UXPA, in partnership with Ladies that UX Durham, is proud to present distinguished author, speaker, and [researcher Karen Holtzblatt](#). She is visiting us from the DC area for this important talk. Karen is CEO of InContext Design, thought leader, industry speaker, author and now Research Scientist at University of Maryland's iSchool. Karen is known in the UX world for developing Contextual Design and Contextual Inquiry, user-centered design techniques employed and taught by companies and universities world-wide. In recognition of her impact on the field, Karen was awarded ACM SIGCHI's first Lifetime Award for Practice. Karen knows what it takes to be successful in the world of high tech and has proven her skills in persuading technology and business professionals to change how they approach user experiences and product design.

H2 About Triangle UXPA

The Triangle UXPA was founded in 2006 and is the Triangle chapter of the User Experience Professionals Association. We are focused on building and supporting the local community of practitioners who focus on crafting great user experiences. You can view a short presentation of the history of our chapter prepared for our 10th anniversary here: [Triangle UXPA History 2006-2016](#)

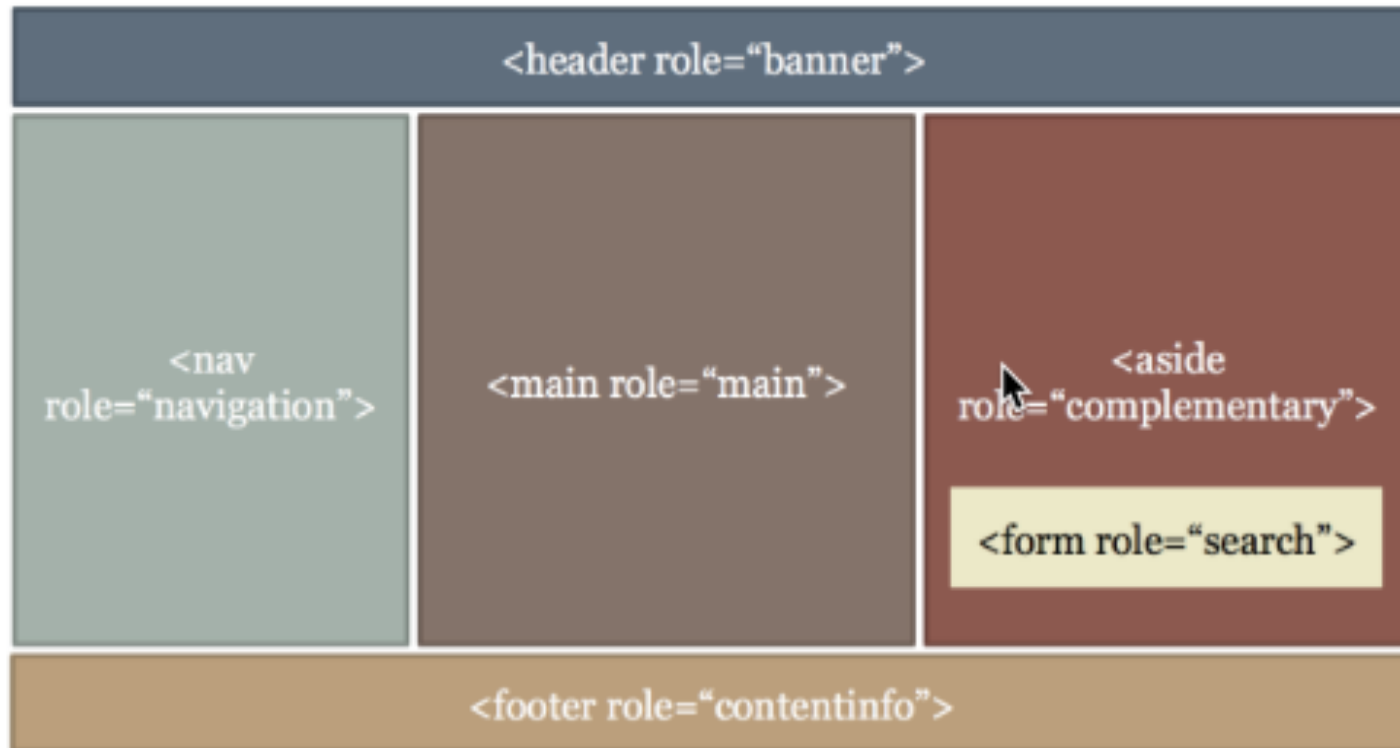
H2 Join the Triangle UXPA

We charge low annual dues for professionals : \$29.95 and only \$14.95 for students. [Join today!](#)

Headings

- Use one H1 per page
- Brief, comprehensive
- Properly nested
 - H1 > H2 > H3 etc.

Layout / Landmarks



Layout / Landmarks

- Banner
 - Main
 - Footer
- } You should always have these landmarks but you can only use them once.
- Aside
 - Nav
 - Search
- } These are optional but you can use more than once.

COLOR

Avoid using color alone to convey information

Example: Using color to convey meaning

✗ Color only

Required fields are in red

Name

Email

✓ Color and symbol

Required fields are in red and marked with an *

Name

Email *

Example: Refer to something using color alone

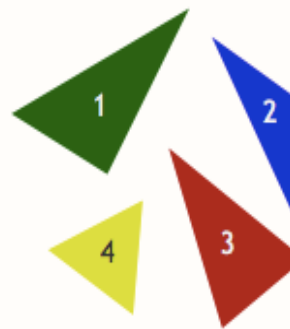
✗ Color only



Which is the right-angled triangle?

- ☐ Green
- ☐ Blue
- ☐ Red
- ☐ Yellow
- ☐ Don't know

✓ Color and number



Which is the right-angled triangle?

- ☐ Green (1)
- ☐ Blue (2)
- ☐ Red (3)
- ☐ Yellow (4)
- ☐ Don't know

Avoid using color alone to convey information



Incorrect



Correct



Incorrect



Correct

Avoid using color alone to convey information

Input with success



Success! You've done it.

Input with warning



Check the formatting and try again.

Input with danger



Sorry, that username is taken. Try another?

Provide good color contrast

- There should be enough color contrast between text and background for the text to be easily readable.
- Be especially careful with light shades of gray, orange, and yellow.
- You can use free tools to check color contrast.

Overly Subtle Color Schemes

Color Scheme	Too Little Contrast	Sufficient Contrast
gray/white	gray on white	gray on white
dark gray/light gray	light gray on dark gray	light gray on dark gray
teal/white	teal on white	teal on white
sea green/green	sea green on green	sea green on green
orange/white	orange on white	red-orange on white

Color Contrast Checker

- [WebAim Color Contrast Checker](#) (web)
- [Colour Contrast Analyzer](#) (Mac and PC)
- [Tanaguru Contrast-Finder](#) (web, provides color recommendations)

WebAim Color Contrast Checker

[Home](#) > [Resources](#) > Color Contrast Checker

Foreground color: #  [lighten](#) | [darken](#)

Background color: #  [lighten](#) | [darken](#)

Contrast Ratio: **15.33:1**

Normal Text

WCAG AA: **Pass**

WCAG AAA: **Pass**

Sample: **I am normal text**

Large Text

WCAG AA: **Pass**

WCAG AAA: **Pass**

Sample: **I am large text**

Explanation

Simply select or enter a foreground and background color in RGB hexadecimal format (e.g., #fd3 or #f7da39). Select the lighten and darken options to modify the colors slightly. You can use the color picker to change colors or change luminosity.

<http://webaim.org/resources/contrastchecker/>

Colour Contrast Analyzer

The screenshot shows a web application titled "Colour Contrast Analyzer". It features two main color selection sections: "Foreground Colour" and "Background Colour". The foreground color is set to #00356B, and the background color is set to #FFFFFF. Below these, there are RGB sliders for Red, Green, and Blue, with values 0, 53, and 107 respectively. A "Contrast Ratio" of 12.2:1 is displayed. The application also includes a "Show RGB Sliders" section with tabs for "Luminosity", "Colour/Brightness", and "Colour Deficiency". The "Luminosity" tab is selected, showing a "Contrast Ratio: 12.2:1". Below this, there are two columns for "Normal text" and "Large text", each with "Pass AA" and "Pass AAA" results, all marked with green checkmarks.

Colour Contrast Analyzer

Foreground Colour

#00356B

Red 0

Green 53

Blue 107

Background Colour

#FFFFFF

Luminosity Colour/Brightness Colour Deficiency

Contrast Ratio: 12.2:1

Normal text Large text

✓ Pass AA ✓ Pass AA

✓ Pass AAA ✓ Pass AAA

<https://www.paciellogroup.com/resources/contrastanalyser/>

Tanaguru Contrast-Finder



Fork me on GitHub

Find me the good contrasts, for web accessibility, between these two colors:

Foreground Color : 

For each color (red, green and blue), enter a number between 0 et 255.

Red : Green : Blue :

The color should be between #000000 and #FFFFFF

Hexadecimal :

Background Color : 

For each color (red, green and blue), enter a number between 0 et 255.

Red : Green : Blue :

The color should be between #000000 and #FFFFFF

Hexadecimal :


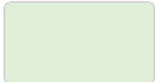
<http://contrast-finder.tanaguru.com>

Yale Information Technology Services



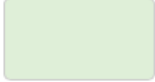
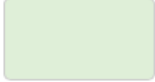
Tanaguru Contrast-Finder

Check and find contrast

Old contrast

Foreground		Background		Sample	Ratio	Distance
hsl(120, 32%, 40%) rgb(70, 136, 71) #468847		hsl(102, 44%, 89%) rgb(223, 240, 216) #DFF0D8		Title big size with words in bold Here is some text sample with some words in bold to illustrate the contrast.	3.61029	

New contrast : 40 results (374 colors tested)

hsl(120, 24%, 35%) rgb(68, 111, 68) #446F44		hsl(102, 44%, 89%) rgb(223, 240, 216) #DFF0D8		Title big size with words in bold Here is some text sample with some words in bold to illustrate the contrast.	4.88288	25.02
hsl(120, 16%, 37%) rgb(80, 111, 80) #506F50		hsl(102, 44%, 89%) rgb(223, 240, 216) #DFF0D8		Title big size with words in bold Here is some text sample with some words in bold to illustrate the contrast.	4.71578	24.04
hsl(120, 9%, 39%) rgb(91, 111, 91) #5B6F5B		hsl(102, 44%, 89%) rgb(223, 240, 216) #DFF0D8		Title big size with words in bold Here is some text sample with some words in bold to illustrate the contrast.	4.54643	11.78

<http://contrast-finder.tanaguru.com>

Color-Blindness Simulator

NoCoffee chrome extension

The screenshot shows the WebAIM website with the NoCoffee Vision Simulator overlay. The website header includes the WebAIM logo and navigation links for services, articles, and resources. A search bar and three quick links (Introduction to Web Accessibility, WebAIM Training) are visible. The main content area features a blurred image of a person reading a book. The simulator overlay on the right provides controls for various visual impairments.

WebAIM
web accessibility in mind

services articles resources

Search WebAIM

Introduction to Web Accessibility

WebAIM Training

Visual Disabilities
Color-blindness

[Home](#) > [Articles](#) > [Visual Disabilities](#) > Page 4: Color-blindness

Article Contents

- Page 1: [Introduction](#)
- Page 2: [Blindness](#)
- Page 3: [Low Vision](#)
- Page 4: [Color-blindness](#)

NoCoffee Vision Simulator [Reset all](#)

Pervasive Issues

- Blur (low acuity): 0
- Contrast loss: 0
- Glare: 0
- Ghosting: 0
- Snow: 0
- Cloudiness (cataracts): 0
- Flutter (nystagmus): 0

Color deficiency:

- ☒ None
- ☐ Protanopia
- ☐ Protanomaly
- ☐ Deuteranopia
- ☐ Deuteranomaly
- ☐ Tritanopia
- ☐ Tritanomaly
- ☐ Achromatopsia (no color)
- ☐ Achromatomaly

Blocked visual field

- ☒ Normal
- ☐ Central (macular d...)
- ☐ Peripheral (glauco...)
- ☐ Corner (retinal det...)
- ☐ Side (hemianopia)
- ☐ Large spots (diabetic retinopathy)
- ☐ Floaters

Strength and size: 40

[More info](#) [Feedback](#)



• [Intro](#)
• [Acc](#)
• [Cor](#)
• [Aug](#)
• [Mo](#)
• [Co](#)
• [Seizure Disorders](#)


Color-Blindness Simulator


Color deficiency: Protanopia (red deficiency)



services articles resources

 Search WebAIM 

 Introduction to Web Accessibility

 WebAIM Training

Visual Disabilities

Color-blindness

[Home](#) > [Articles](#) > [Visual Disabilities](#) > Page 4: Color-blindness

Article Contents

- Page 1: [Introduction](#)
- Page 2: [Blindness](#)
- Page 3: [Low Vision](#)

NoCoffee Vision Simulator

[Reset all](#)

Pervasive Issues

Blur (low acuity):	<input type="range"/>	0
Contrast loss:	<input type="range"/>	0
Glare:	<input type="range"/>	0
Ghosting:	<input type="range"/>	0
Snow:	<input type="range"/>	0
Cloudiness (cataracts):	<input type="range"/>	0
Flutter (nystagmus):	<input type="range"/>	0

Color deficiency: **Protanopia** ▾

Blocked visual field

- ☒ Normal
- ☐ Central (macular degeneration)
- ☐ Peripheral (glaucoma, retinitis pigmentosa)
- ☐ Corner (retinal detachment)
- ☐ Side (hemianopia)
- ☐ Large spots (diabetic retinopathy)
- ☐ Floaters

Strength and size: 40

[More info](#)

[Feedback](#)

Color-Blindness Simulator

Color deficiency: Achromatopsia (no color)



services articles resources



Introduction to Web Accessibility



WebAIM Training

Visual Disabilities

Introduction

[Home](#) > [Articles](#) > Visual Disabilities

Article Contents

- ◊ **Page 1: Introduction**
- [Page 2: Blindness](#)
- [Page 3: Low Vision](#)
- [Page 4: Color-blindness](#)



NoCoffee Vision Simulator

Reset all

Pervasive Issues

Blur (low acuity):	<input type="range"/>	0
Contrast loss:	<input type="range"/>	0
Glare:	<input type="range"/>	0
Ghosting:	<input type="range"/>	0
Snow:	<input type="range"/>	0
Cloudiness (cataracts):	<input type="range"/>	0
Flutter (nystagmus):	<input type="range"/>	0

Color deficiency: **Achromatopsia (no color)** ▾

Blocked visual field

- ☒ Normal
- ☐ Central (macular degeneration)
- ☐ Peripheral (glaucoma, retinitis pigmentosa)
- ☐ Corner (retinal detachment)
- ☐ Side (hemianopia)
- ☐ Large spots (diabetic retinopathy)
- ☐ Floaters

Strength and size: 40

[More info](#)

[Feedback](#)

Last



Sp
Caba

Ge
Fr

Tu



Related Resources

TEXT

Typography

- Watch the use of CAPS
- Use a legible font
- Use adequate font size

Avoid Images of Text

A quick Brown Fox

A Quick Brown Fox

A quick Brown

Avoid Images of Text

- If possible, use text itself, rather than uploading images of text
- When zoomed, images of text can become illegible

Leading / Line Spacing

- Use legible leading
- The amount of space between lines should be no less than half the character height.

Leading / Line Spacing

Too Little

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer posuere orci quis ligula. Donec egestas massa vulputate nisl. Curabitur venenatis. Nullam egestas facilisis ante. Suspendisse tincidunt. Etiam vitae leo id mauris laoreet luctus. Cum sociis natoque penatibus et magnis dis parturient montes.

Too Much

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer posuere orci quis ligula. Donec egestas massa vulputate nisl. Curabitur venenatis. Nullam egestas facilisis ante. Suspendisse sociis natoque penatibus et magnis dis parturient montes.

Good

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer posuere orci quis ligula. Donec egestas massa vulputate nisl. Curabitur venenatis. Nullam egestas facilisis ante. Suspendisse tincidunt. Etiam vitae leo id mauris laoreet luctus. Cum sociis natoque penatibus et magnis dis parturient montes.

Paragraph Width

- Paragraph width between 60 -100 characters

Paragraph Width

Too Short

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer posuere orci quis ligula u. Donec egestas massa vulputate nisl. Curabitur venenatis. Nullam egestas facilisis anteiter. Suspendisse tincidunt. Etiam vitae leo id mauris laoreet luctus. Cum sociis natoque.

Too Long

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer posuere orci quis ligula u. Donec egestas massa vulputate nisl. Curabitur venenatis. Nullam egestas facilisis anteiter. Suspendisse tincidunt. Etiam vitae leo id mauris laoreet luctus. Cum sociis natoque.

Good

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer posuere orci quis ligula. Donec egestas massa vulputate nisl. Curabitur venenatis. Nullam egestas facilisis ante. Suspendisse tincidunt. Etiam vitae leo id mauris laoreet luctus cum sociis.

Avoid Justified Text

Flush Left/Rag Right

Paragraphs of type can be aligned in several different ways. The axis can be central, left or right. Text can also be set so that both sides of the column are aligned or justified. The unaligned side of the paragraph that creates a more jagged shape is called the “rag.”

Justified

Paragraphs of type can be aligned in several different ways. The axis can be central, left or right. Text can also be set so that both sides of the column are aligned or justified. The unaligned side of the paragraph that creates a more jagged shape is called the “rag.”

LINKS

Links

- Make sure links are recognizable
 - Links should be underlined
- Ensure link text makes sense on its own

Avoid generic link text

- Click here
- Here
- More
- Read more
- Link to [some link destination]
- Info

Accessible vs Inaccessible Link Text

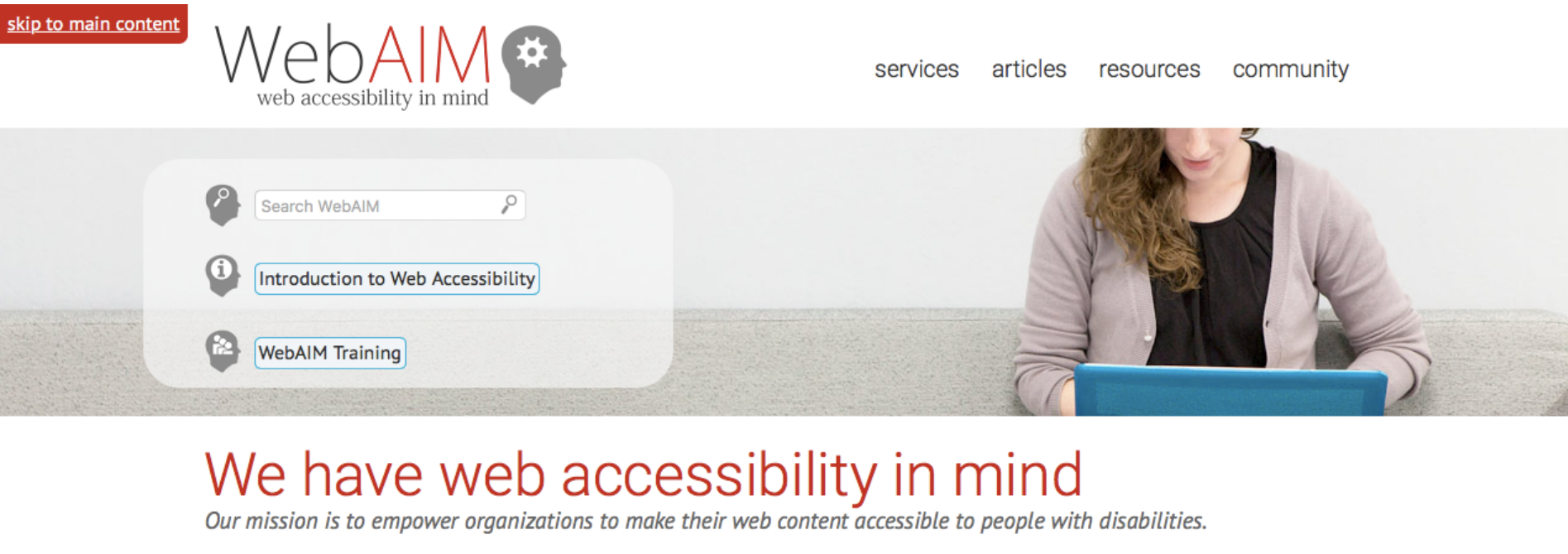
Unclear Link Text Examples

- [Click here](#) for instructions on how to use the new Penn State Web tool.
- Learn more about color and accessibility [here](#) and [here](#)
- Story 1 ([Read More](#)) | Story 2 ([Read More](#))
- Accessibility 101 ([Register](#)) | Accessibility 102 ([Register](#))

Usable Link Text

- [Instructions for the new Penn State Web tool](#) are available online.
- Learn more about color and accessibility in terms of [contrast](#) and [color coding](#)
- [Story 1](#), [Story 2](#)
- Register for: [Accessibility 101](#), [Accessibility 102](#),

“Skip to Main Content” link



Design Link Focus Indicators

Example: Unique styles for different link states

✓ Style links to stand out from text

Some people can't use a mouse and use only a [keyboard to navigate](#) through web pages.

It is important that users can reach all interactive elements using the keyboard, and that it is clear which element has focus.

Visible keyboard focus could be a border or highlight that moves as you tab through the web page.

✓ Mouse hover style

[keyboard to navigate](#)



✓ Keyboard focus style

[keyboard to navigate](#)

✓ Touch or click style

[keyboard to navigate](#)



IMAGES / VIDEOS / ANIMATIONS

Users should have control over what content they listen to or watch

- Provide a play or pause button on automatically updating content.

Example: Show play/stop and selection controls in carousel design



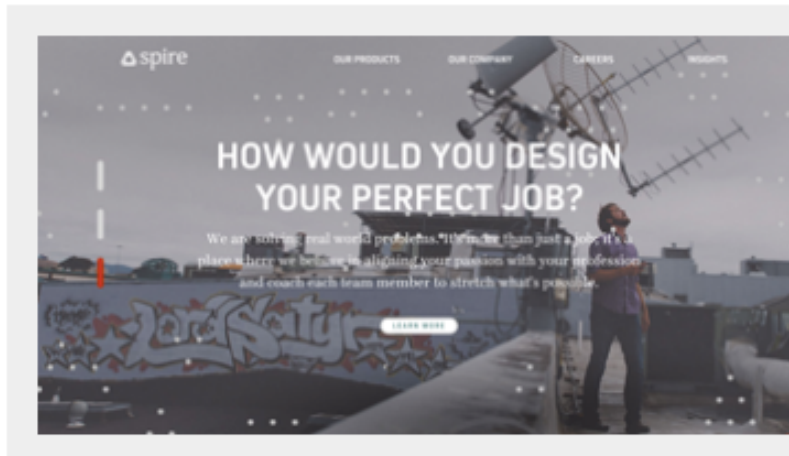
Avoid flashing or strobing content that could cause seizures

- In general, if the content flashes more than three times per second, is notably large, has bright contrast in the flashes, it may cause a seizure and should be avoided.

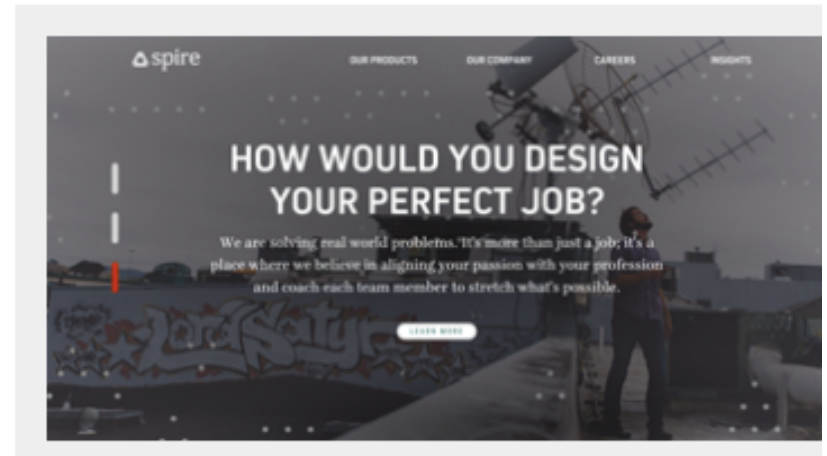
Text over images

- If you will design text over images, make sure to have enough contrast.

⊗ Don't:



✓ Do:



Q+A

Thank you

“ The power of the web is in its universality. Access by everyone regardless of disability is an essential aspect.”

Tim Berners-Lee, creator of the World Wide Web

Yale *Information Technology Services*