Accessibility of Front-end Technologies

What Is Accessibility?

- The UW strives to fully include everyone who engages with the UW.

- The UW community (including the public) has people with many disabilities:
  - Mobility impairments, sensory impairments, learning disabilities, attention deficits, autism spectrum disorders, speech impairments, health impairments, and psychiatric conditions.

- Accessibility is about information technology (IT) that gives people with disabilities the opportunity to acquire the same information, engage in the same interactions, and **use the same services as a person without a disability in an equally effective and integrated manner**.

Why Care About Accessibility?

Building an inclusive University

- **Diversity:** The UW values diverse experiences and perspectives

- **Responsibility:** People who engage with the UW expect (and have paid for) effective and integrated services

- **Commitment:** The UW is committed to providing access "in its services, programs, activities, education, and employment for people with disabilities"

- **Law:** It is the law. The UW is covered by the Americans with Disabilities Act, Section 504 of the Rehabilitation Act, and other federal and state laws

- **Risk:** We could get sued

What's Happening

- UW Accessibility Task Force
  - Sponsored by Kelli Trosvig, UW CIO, and Randy Hodgins, VP of External Affairs
  - Includes representatives from Advancement, UW-IT, Human Resources, Student Services, Procurement, and Center for Teaching and Learning

- Accessible Technology at the UW - http://uw.edu/accessibility
  - Detailed information on making documents, websites, and videos
  - UW IT Accessibility Guidelines - http://uw.edu/accessibility/guidelines
  - IT Accessibility Checklist - http://uw.edu/accessibility/checklist

Consider the Assistive Technology User

JAWS

NVDA

VOICEOVER

DRAGON

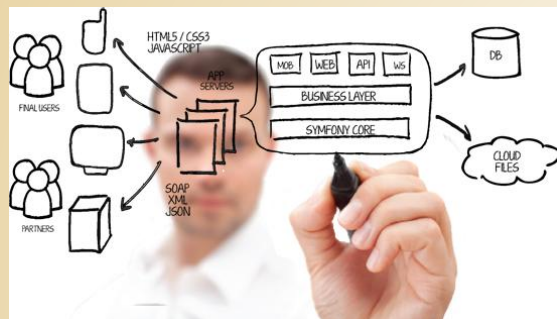**MYAPP**

Consider the Assistive Technology Developer

MYAPP ⬅➡ JAWS

Give the assistive technology developer code with structure and with semantic and meta information

Code Basics

- Standards based

- Structured

- Semantic element types

- Hierarchical headings

- Alternative text for visual elements

- Labelling form fields and tables

- ARIA landmarks and roles

Interface Basics

- **Perceivable** - Content and controls perceivable by all users

- **Operable** - Content and controls operable by all users

- **Understandable** - Content and user interfaces understandable by all users

- **Robust** - Interpretable by a wide variety of user agents, including assistive technologies

Specific methods described on the IT Accessibility Checklist - http://uw.edu/accessibility/checklist

Testing Your Interface

- Consult with the Access Technology Center staff
    - atcenter@uw.edu

- Use the Checklist to review your design decisions

- Turn off your mouse, then navigate with arrows and tabs

- Use a screen reader such as JAWS, NVDA, or Voiceover

- Use Web Developer's Toolbar to assess your use of headings, ARIA, content sequencing

- Try using your product with Dragon Naturally Speaking

Of Libraries, Frameworks and Themes

- Packages promise accessibility

- Whether the final product is accessible depends how you put the pieces together and how you use them

- Easy to break accessibility features

- Be clear about your accessibility goals, then test regularly as work progresses

Of Hamburgers and Glyphs

```
<div class="burger">
   <div class="bar1"></div>
   <div class="bar2"></div>
   <div class="bar3"></div>
</div>
```
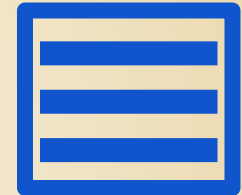
```
<button type="button" class="btn btn-default"
   aria-label="Left Align">
     <span class="glyphicon glyphicon-align-left"
       aria-hidden="true"></span>
</button>
```

Going Beyond Mere Compliance

Toward Higher Design Maturity

1. **Function and Form** - Focus on accessibility guidelines to achieve technical compliance

2. **Problem Solving** - Research and design solution to support accessible task completion

3. **Framing** - Accessibility and diversity are integrated into the design process, driving creative thought and innovation

From "An Accessible Design Maturity Continuum" by David Sloan - http://www.paciellogroup.com/blog/2014/06/acccessibility-maturity-continuum

Optimize for the Whole Experience

- Having lots of features and functions is not the goal

- Use UX to learn how to design the whole user experience

- Optimize the end-to-end process of using your product to reach the user's goal

- Better to have fewer features and functions and do them better, creating a clean integrated product with which the user can easily and efficiently reach their goal

From "Scenario-Focused Engineering" by Austina De Bonte and Drew Fletcher