**Proposal Title:** A Framework Based on Common Design Patterns

**Overview**

Past performance has proven that accessibility and compliance standards often do not align. For many frameworks like Bootstrap and Vaaden, accessibility is an afterthought. Many frameworks and tools are still not built with common web standards, compliance regulations, and accessibility standards in mind. This project proposes to identify research gaps and areas of overlap to create a framework that aligns with current government regulations and WCAG 2.0 standards. The Advantages of a common framework include increased best practices documentation, ease-of-accessibility integration, and compliance with government regulations like 508 compliance where many applications currently show inadequacies due to lack of training or lack of usability and accessibility.

The proposed framework would allow development teams an open-source tool that would make it easier to adopt web standards, WCAG 2.0, and 508 compliance. Research and documentation of additional popular standards would provide users with a better understanding of the impact of existing standards and how they diverge from actual accessibility.

**Statement of the Intellectual Merit**

The proposed framework would offer development teams a framework and guidelines to quickly implement web standards, 508 compliance, and build a web application quickly and efficiently. In addition to following W3G standards and compliance, it would reduce the amount of rework across teams and products by providing a common framework that is responsive and accessibility friendly.

**Statement of the Broader Impacts**

The objective of this research project is to plan and implement a formative and summative evaluation of current local, state, federal and international standards in relation to coding best practices, accessibility, and government regulations (e.g. UK Equality Act, US 508 Compliance, W3C, WAI WCAG 2.0, Level AA, and EU Standards). The team will then research common design patterns, best practices, to create an HTML/CSS and JAVA framework; as well as document guidelines in a wiki. The final findings may be submitted to the web standards project and international accessibility leaders.

The proposed UI Framework would impact the HCI community as a whole, but would be specifically useful to development teams working for educational, government, and public entities who require accessibility and web standards compliance.  The end-user of websites created with the framework will benefit the most since the result would be a framework built with responsive-design, accessibility, and web standards best practices in mind.

**Scope of the Budget**

This project could easily span 2-3 years to encompass the initial setup, formative evaluation, UX design, system design, documentation and quality assurance.   The research team would include roles such as software developers, UI Designers/Developers, UX Researchers, HCI Professors, Quality Assurance Testers, Product team leads, and Accessibility experts.  Deliverables from this project would include published documentation on tool development as well as a pattern library that incorporates all of the framework’s components.