



**Organization: UC San Diego Library**

**Primary mentor: Doug Worsham**

**Secondary mentor(s): Possibility of additional Digital Experience team members, tbd.**

Project Title	Applying data science to user experience and inclusive design for library websites
Description	<p>The project fellow(s) will join a research team examining the application of data science to digital user experience and inclusive design. Through the use of data science and/or machine learning tools, fellow(s) will analyze UC San Diego’s web presence, applying an inclusive design lens to consider user expectations, behaviors, and experiences. Fellow(s) will work with the research team to take a data-informed approach to identifying improvements to both structure and content (e.g. accessibility, usage, impact, content effectiveness) as part of an overall analysis of digital user experiences for diverse communities and audiences. Special attention will be given to inclusive and equitable approaches to hypotheses and problem definition, as well as the development of a framework to measure and track successful completion of user-centered actions in the Library’s digital environments.</p>
Problems/ Research Questions	<ol style="list-style-type: none"> <li>1. What does usage data tell us about the current core functions of our public websites?</li> <li>2. What problems are users trying to solve through our websites? To what extent is our website meeting those needs?</li> <li>3. How successful are users at completing user-centered actions in our digital environments? How can an inclusive design approach help us identify pathways to increase user success and improve user experiences?</li> <li>4. What are users not doing on our public websites and how does this relate to our core service areas?</li> </ol>
Techniques	<ol style="list-style-type: none"> <li>1. Website analytics</li> <li>2. Accessibility and content analysis</li> <li>3. User flow analysis</li> <li>4. Topic / Content modeling and linguistic analysis</li> </ol>

	<p>5. Gap analysis</p>
<p>Tools/ Languages used</p>	<p>Siteimprove &amp; Hotjar</p> <ul style="list-style-type: none"> <li>● Usage data</li> <li>● Heatmaps</li> <li>● User flows</li> <li>● User behavior recordings</li> <li>● Site search data</li> <li>● Content Analysis</li> </ul>
<p>Data</p>	<p>Description:</p> <ul style="list-style-type: none"> <li>● Website usage and user behavior data as tracked through Siteimprove and hotjar.</li> <li>● Website content (corpora)</li> </ul> <p>Data Type:</p> <ul style="list-style-type: none"> <li>● structured, quantitative data</li> <li>● data visualizations</li> <li>● user behavior recordings</li> </ul> <p>Data Size:</p> <ul style="list-style-type: none"> <li>● varied</li> </ul>
<p>Outcome</p>	<ol style="list-style-type: none"> <li>1. A list of the top user actions and core functions currently being met through our website.</li> <li>2. A gap analysis indicating problems we are currently trying to solve through our content that are underutilized.</li> <li>3. Top examples of pages that most often lead to a successfully completed user action and a list of the top counter-examples.</li> <li>4. Recommendations of improved user centered calls to action.</li> </ol>
<p>Milestone Timeline</p>	<ol style="list-style-type: none"> <li>1. Phase 1 - Analysis and overview of existing data sources. Siteimprove and hotjar training. Accessibility training, including direct interaction with a screen-reader user as well as discussion of the diversity of digital accessibility user experiences and the impact of inclusive design. Hands-on learning, exploration, and early analysis of data sources.</li> <li>2. Phase 2 - Team-based hypotheses generation and problem definition. Training in problem definition from a designing for equity framework. Discussion and team exploration of applications for data science. Co-development of analytical frameworks. Identification of data strengths and areas where further data collection is needed. Articulation of core user functions and pathways. Gap analysis of underutilized content and barriers</li> </ol>

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	<p>to user success.</p> <ol style="list-style-type: none"><li>3. Phase 3 - Data collection and analysis. Team-based synthesis and analysis of data. Collaborative design of data visualization and interpretation techniques.</li><li>4. Phase 4 - Reporting and recommendations. Opportunities to engage with core stakeholders in conversation about data, methods, and analysis. Presentation of findings and articulation of next steps.</li></ol>
References	<ol style="list-style-type: none"><li>1.</li></ol>