Heritage Presentation in Action

First Issue

Heritage Presentation with Digital Technology at Sites

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Heritage Presentation in Action

First Issue: Heritage Presentation with Digital Technology at Sites

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National Park (U.S.A.)

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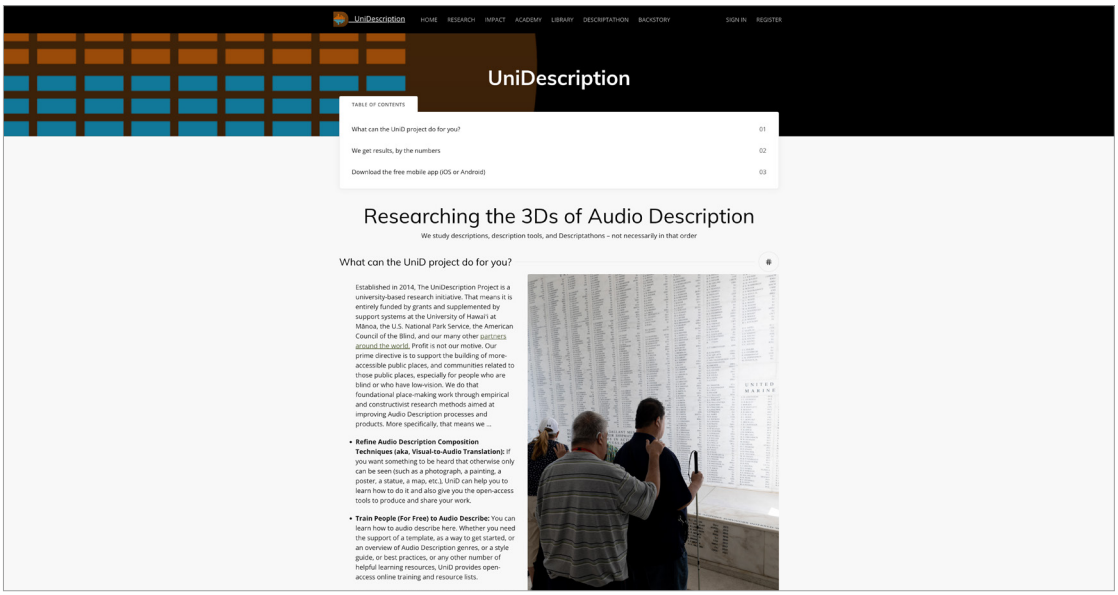
Collaboration, Friendly Competition, and Co-Creation
A Hackathon-Inspired Way of Audio Describing the World, One National Park Service Brochure at A Time

Digital Media
Open-Access, Open-Source Production and Dissemination Software, Integrating Mobile Applications, Screen Reader Technologies, AI, Digital Media, and Place

Introduction

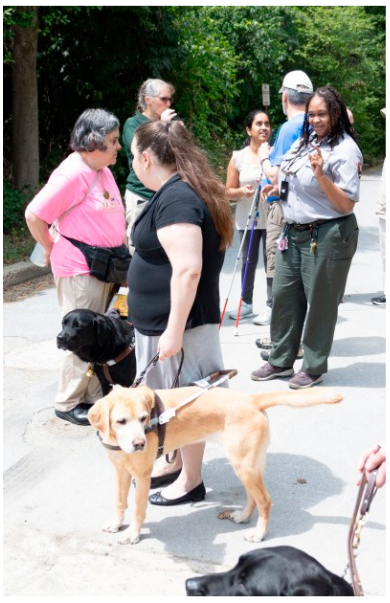
The National Park Service (NPS) is a bureau within the Department of Interior under the Executive Branch of the United States federal government. The NPS manages 430+ individual park sites in all 50 states, Washington, D.C., and US territories. Each of these sites has an official park brochure given to visitors free of charge. Through photographs, illustrations, graphics, artwork, text and maps, highlights of the park's history, visitor activities, services, and amenities are communicated. Visitors also collect these brochures as souvenirs of their park adventures.

While the NPS offers braille alternatives for its brochures, braille is read by only a small portion of the blind and low-vision populations and these booklets do not currently provide extensive descriptions for images and maps. The rest of the NPS's visitors who are blind, have low vision, or have other print related disabilities and do not read braille are unable to access, or access fully, the multimedia content provided by each brochure. To remedy this, the NPS has engaged in a decade-long partnership with the University of Hawaii to provide an audio described alternative format of its brochures. This partnership project, called The UniDescription Project, or UniD, based its name on the design grid of a park's official brochure, internally referred to as its "unigrid."



Audio description is a textual remediation of visual information into audible media, primary used by people who are blind or who have limited vision. For example, a photograph of the Old Faithful geyser erupting at Yellowstone National Park would include a description of critical visual details, including what the erupting geyser looks like as well as descriptions of the surrounding landscape, the time of day, and the vantage point of the image. Depending on the medium, the audio description can be delivered through screen reader technology on, for example, a computer or mobile device. Audio description can also be professionally recorded and delivered through various audio playback devices.

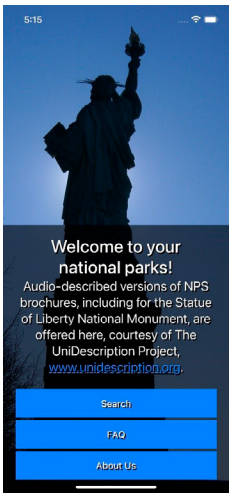
Audio-described brochures in the UniD ecosystem are delivered in multiple formats. Through the UniD mobile app available for free on iOS and Android platforms, users can access text files using their screen reader technologies or playback mp3 recordings. Many parks also uploaded this content onto their websites, as additional access points, and all brochures are available on UniD's website.

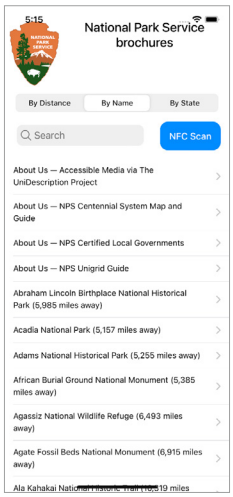


Testing Audio Description: Michelle Edwards leading a tour of Rock Creek Park (2024)

0:00 / 0:00

DESCRIBING: A vertical color photograph taken June 25, 2024
DESCRIPTION: Michelle Edwards, the Interpretation, Education & Community Engagement Programs Manager at Rock Creek Park, leads a tour of the park in this photo that shows a group of people with guide dogs. The group has gathered in an open outdoor area, and Edwards is talking with them about her plans for the group to explore the park.
Edwards is wearing a traditional National Park Ranger uniform, with dark green pants and a khaki, short-sleeved and collared shirt, with the NPS logo on her left sleeve. She is smiling and gesturing with her hands as she talks. Edwards is an African-American woman with shoulder-length black hair, woven tightly into braids.
Besides Edwards, five other people are visible, and parts of additional people and guide dogs have been cropped partially out of the photo, indicating that the group is larger than these half-dozen individuals. The group's members are socializing with each other or listening to Edwards and seem to be in an informal moment, between activities.
Besides the three guide dogs in the photo, two of the people photographed are holding white canes. Two of the three guide dogs are black Labradors, and one is a golden. All three dogs wear leather harnesses with a prominent handle on the back, indicating that they are working guide dogs.





The process of producing media for heritage presentation

While some research on effective audio-described content for live performances and videos has been conducted around the world, the same was not true for the practices of audio describing static content, such as a print publication or an exhibition, at the start of the UniD project. When Harpers Ferry Center (HFC), the interpretive media service-wide center of the NPS, received funding to pilot the description of 40 unigrid brochures, they wanted to create an iterative, research-based process to ensure the audio-described brochures were effective.

UniD Core Team Development:

Utilizing the NPS partnership structure, Michele Hartley, Media Accessibility Coordinator at HFC as well as the NPS's agreements technical representative for the project, partnered with the University of Hawaii and Dr. Brett Oppegaard, a professor in the School of Communication and Information in the College of Social Sciences at the University of Hawaii. As the primary investigator, Dr. Oppegaard's research into digital media and communication was a critical asset. To ensure a validated disability lens on the effort, Dr. Oppegaard also engaged with partners at the university's Center on Disability Studies, with Dr. Megan Conway and Dr. Tom Conway joining the project as research associates. Knowing the project would require software development, Dr. Oppegaard also created a long-term partnership with the web and mobile development company Montana Banana.

Project Development

Hartley and Oppegaard quickly recognized the infeasibility of working individually with 40 separate park sites to write and review brochure audio description in an efficient and timely manner. Working with individual parks also meant that lessons learned could not easily be shared and leveraged. Instead, it was decided that park staff would engage together in a virtual workshop environment to learn about audio description, support each other, and write the descriptions for each of their park's brochures. To engage park staff, a hands-on, gamified experience was developed after an initial pilot workshop. These virtual workshops are called Descriptathons. To date, UniD has hosted 10 Descriptathons, or about one per year for the past decade.

In order to implement and support each Descriptathon, a robust online platform was developed that includes:

- Open Access and Open Source production software used to organize, write, revise, select, guide (via AI), and store descriptions, which then can be shared via the free UniD app, and other online repositories, for public consumption,

- a digital space where participants can connect and create community.

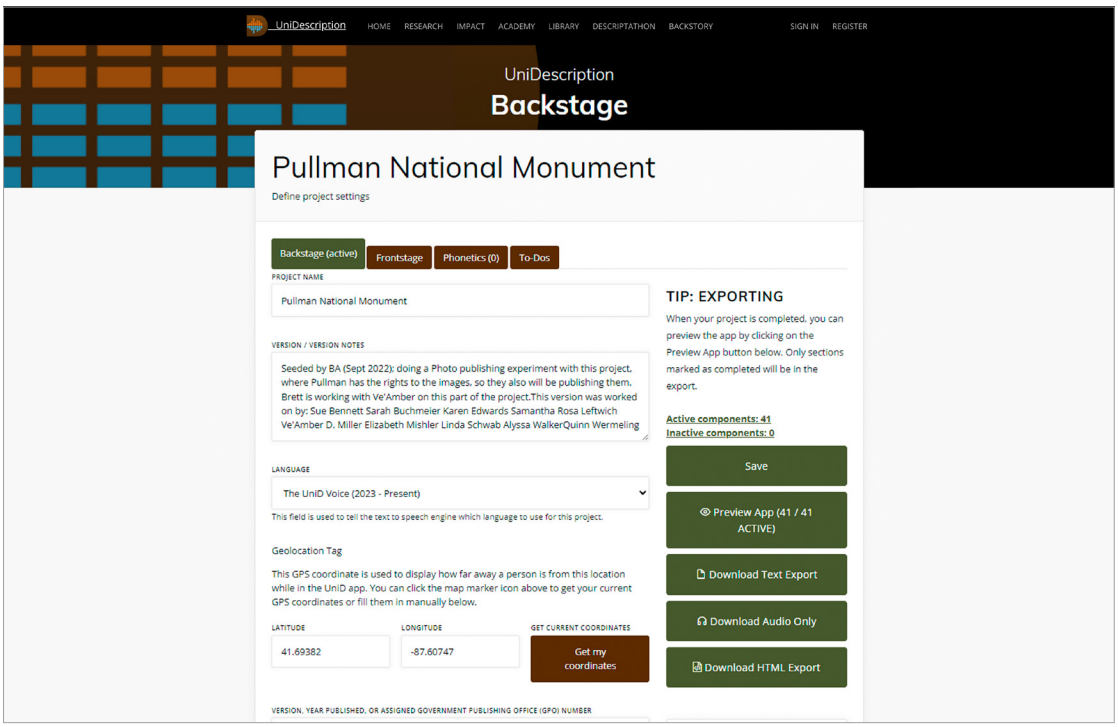
- asynchronous training components to learn how to use the production software as well as to gain foundational knowledge about the principles, practices, and latest academic research about audio description,

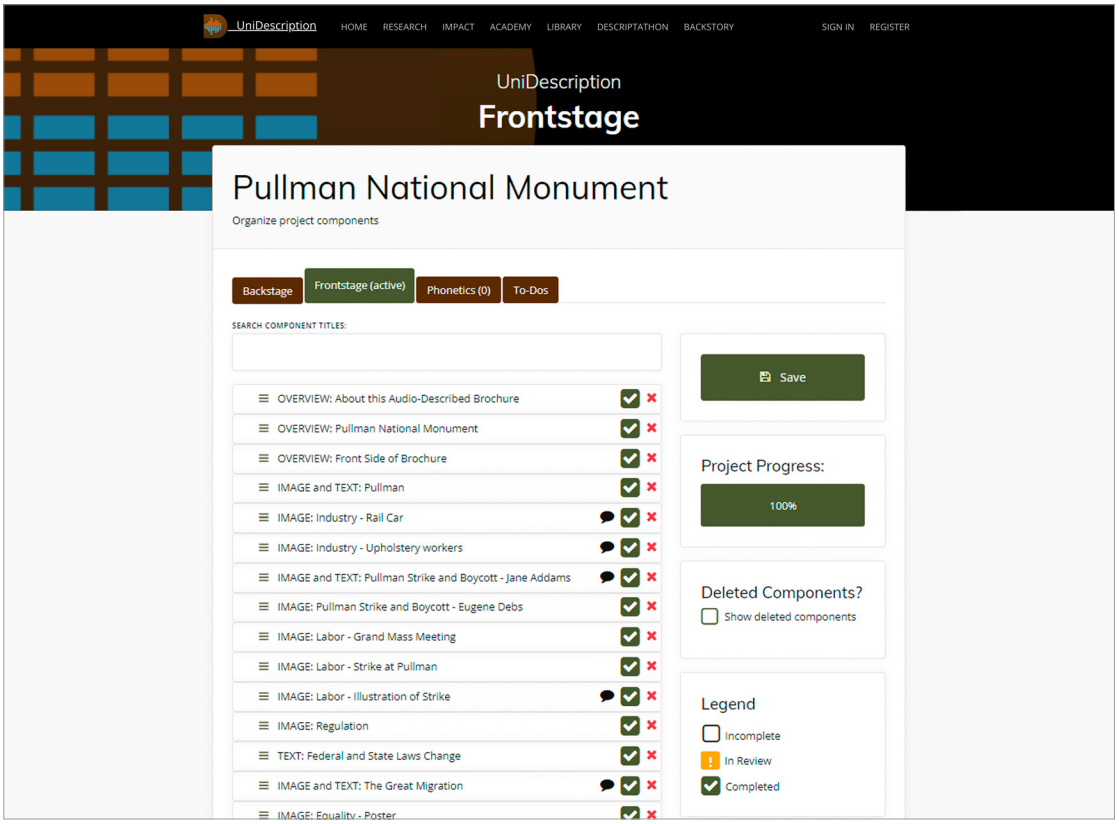
- feedback loops from blind and low-vision collaborators for description teams to learn from and revise their descriptions accordingly,

- and, methods for the core team to check the progress of each individual and group.

User Feedback and Iteration

Weaving user feedback into the project was part of the project's inception. The project began with a core team member who brought disability history and theory expertise and had lived experience as a DeafBlind individual. The project also hired two consultants, one blind and one with low-vision, and a blind research assistant to participate in UniD's first workshop. This emphasis on user feedback then blossomed into a thriving partnership between the university and the American Council of the Blind (ACB). As the project and this community grew, individuals from ACB and other organizations representing people who are blind or have low vision did not just provide feedback and personal perspectives. They began to critically evaluate the description and became active collaborators in the description-writing process. This user feedback was a critical part of the methodology for developing effective audio description. On the spot collaboration informally influenced the audio description's development. Formal evaluation questions qualitatively and quantitively continue to validate the approach and effectiveness of the work as well as inform improvements and feed into published research papers.





The desire to creatively iterate and to test novel theories and methods about audio description has also been an important methodological approach. Embracing iteration has organically led to further development of the techniques, tools, and resources. It has also allowed the project to take advantage of other significant global developments. Examples include the creation of AI digital-assistant "Guidedogs" who contribute to compositional feedback loops based on programmed personas as well as the creation of a formal mentoring system within each Descriptathon that pairs experienced UniD users who are blind or who have low vision with those who are just joining the project.

Constraints: What problems/issues were associated with the best practice

Time and Volunteer Constraints

The strength of UniD has also brought some challenges. UniD's gamified, collaborative virtual workshop approach to audio description development means a minimum number of participants is required to make the gameplay fun and fruitful. To make the gamified, hackathon-like competition work, at least 16 teams are needed for each Descriptathon, with about 10 people per team. This approach requires fostering a community of committed and actively engaged participants and repeat volunteers. It is now required that each park brochure team has at least three people representing the site in case one (or even two) participants drop out at the last minute. Teams are rounded out with available volunteers to bolster content development. At least two people who are blind or who have low vision are embedded on each team, to provide multiple perspectives from the target audience (and in case one drops out). In line with the partnership agreement, Dr. Oppegaard has also brought outside and similarly-situated organizations, such as Parks Canda and National Parks UK, to participate. The NPS cannot often provide all 16 teams, based on staff availability, meaning these organizations have filled in gaps, and they have provided a welcomed international user perspective on audio description to supply cross-cultural understandings as well.

Descriptathons are intense and require three full days of work, and participants are expected to be present the entire time. In today's steady stream of virtual meetings and multitasking pressures, the core UniD team has had to repeatedly emphasize the time commitment to individuals, and we have also extended the Descriptathon into a list of online and synchronous pre-workshop activities, to address the educational needs participants have in terms of audio description fundamentals, description genres, and software training. Because UniD's online ecosystem is complex, these preworkshop orientations, activities, and meetings had to be developed so each participant could quickly immerse themselves in the online UniD ecosystem as soon as the workshop begins. While this adds to the time commitment of participants, properly preparing participants in advance, especially for the blind and low-vision participants, who also have benefitted greatly from the mentoring initiative, was one of many lessons learned along the way, and perhaps one of the most critical realizations as the project has evolved.

Appealing to the Diversity of Participants

While the gamified competition aspect of the workshop motivates some, it appeals less to others, who just want to get the work done. In some cases, the fast-paced competitive environment of the virtual workshop overwhelms some people. So the competitions are deliberately presented as friendly and fun, with silly prizes that match the tone of the event, like a Hawaiian coconut for the grand prize. What is strongly emphasized is the intention of the friendly competitions as community-building learning experiences, so as not to turn people off. What is also always cultivated is the intention that participants, including the administration team members, enjoy our time together. This is done not just to try to hold the attention of participants. It is also done to foster a positive association with audio description development and to transform the perspective of audio description from a burdensome legal requirement that takes extra time and resources into the perception and real-life experience that audio description is a creative, fun part of project development that helps an even broader audience connect with the created content. Audio-described media is not just accessible, in other words, it's better media, for people who cannot see or cannot see well but also people who are print dyslexic or people who simply want to learn with their ears at the moment rather than their eyes.

Ensuring Accessibility on the Backend

The project team would be remiss if it created accessible audio-described brochures but did not ensure that the workshop experience and the online UniD ecosystem was compliant and usable by all participants with and without disabilities. This always means allocating resources to identify and fix accessibility and usability issues. Additional meetings with blind and low-vision participants are set up to specifically train them on how to use the system and pinpoint issues with whatever accessibility tools they use in their everyday lives. The software developer participates in these meetings and is present during the entire Descriptathon to fix issues on the fly and behind the scenes. When issues can't be fixed quickly, workarounds are created and a punch list of items is created, to be addressed before the next Descriptathon, meaning every Descriptathon is more accessible than the one before it.

Funding and Resource Constraints

UniD is supported by NPS funds, internal University of Hawaii resources, and external grant monies, and none of those are consistent or guaranteed from year to year. The above-mentioned punch list of items and all of the improvements that the core team would like to make to the Descriptathon experience, the online tools and resources, and the extensive research needs are inevitably constrained by funding. While funding sometimes looms large, the core team works with what it has and continually promotes UniD to gain support. To date, the UniD project has gone from describing the required 40 brochures, to have nearly 200 brochures described and available to the public. The team's willingness to promote the project and ask for money has been a necessary part of the project's development.

Revision Constraints

From time to time, unigrid brochures are revised. Revisions include small edits to text, maps and occasionally the replacement of an image. Brochures are also completely revised. With the focus on checking off the list to audio describe all brochures at least once, an infrastructure has not yet been implemented to guarantee that the UniD brochure will be revised in concert with their print counterparts. The importance of revising the UniD brochure is communicated to parks but not mandated. The UniD system has been built to easily update the brochure content and to automatically share updates with users. Once updated, the revised content flows into the mobile applications and web versions.

Impacts and evaluations: What are the benefits of the best practice

Increased Access, Awareness and Knowledge

The primary goal of UniD was to decrease barriers to a one of the NPS's primary communication products given to visitors when they arrive at a park. Now close to 200 NPS brochures are accessible to people who are blind, have low vision, or have a print-related disability.

Park staff and volunteers without vision or print-related disabilities have developed positive relationships with these often disenfranchised populations and a more direct understanding of these users' experiences, both negative and positive, when listening to audio description. The most consistent survey response related to what participants found most valuable about the Descriptathon workshops, for example, was the direct collaboration among staff and volunteers with users of the descriptions.

Once people who are blind or who have low-vision learned about this project, they started requesting park brochures that they personally would like described, and our team has fulfilled those requests. While anecdotal, testimonials during and after workshops suggest that users have become more involved and connected to NPS sites. For example, one user shared that when planning a trip to Denali National Park, they were actively involved in making suggestions and decisions about the trip because the park's audio-described brochure gave them pertinent information. Another user noted that after listening to the audio-described brochure for Cape Cod National Seashore, they were able to actively answer questions and direct their friends during their visit. We have started to collect such testimonials in an Oral History project kept on the project's website that includes about 20 lengthy discussions about the project so far, lasting anywhere from 20 minutes to an hour each. In short, UniD brochures provide users with the agency to be more active, independent visitors to important public places that attracts communities of citizens, regardless of their demographic distinctions otherwise.

The UniD approach of training people to write description has a domino effect. Once participants are trained, they are able to apply their skills to other audio-described projects. For example, one park that won the competition during a Descriptathon immediately turned around and used the same software and training to describe three more of its site brochures. Another person who participated in a Descriptathon moved to another park and had that park's brochure described shortly thereafter. NPS staff often move to different sites. They take their new-found knowledge, skills, and enthusiasm with them and regularly have advocated for that park to join a Descriptathon and get the park's brochure described.

To date, 11 academic papers also have been published in peer-reviewed journals, and three academic posters have been presented at conferences and published by Dr. Oppegaard as the single author or in collaboration with his academic peers. The project also has been the source of nearly 40 presentations at academic conferences as well as professional conferences and workshops, given by Dr. Oppegaard as well as his academic colleagues and on occasion other members of the UniD team.

Transferability to other contexts

Open-Access, Open-Source, Free Opportunities to Engage with UniD

UniDescription was purpose-built as an Open Access, Open Source online platform that anyone can use to create or listen to Audio Description at no cost. UniD's online Academy page includes free and asynchronous opportunities to learn about concepts, principles, and theories about audio description, including critical contextual information, such as statistics about the field and the theoretical models of disability. UniD's Academy page also goes into detail about how to use the software, from start to finish, to create an account, to set up a project, to write audio description, and to share it broadly. After creating the audio description, project owners can export the media in many ways and push it to their mobile applications or upload content onto their own websites. As long as UniD has the resources to support its infrastructure, anyone across the world can use it.

Additional Technical Considerations

UniD's software was built because the team could not identify another tool that could facilitate the writing of description in an intuitive and organizationally guided way that would provide a baseline level of consistency. Creating this structure for audio description writers helps them tremendously. Applying basic principles utilizing headings and a hierarchy of information is the basis of UniD's approach.

This structure also needs to transfer to the audio description product available to the public. Creating a holistic experience for users that offers them as much choice to jump from topic to topic within an audio-described brochure is key. Further, setting up an organizational structure that provides consistency across described static material allows users to focus less on figuring out the organizational structure and more on the content and experience.

Remembering the core audience for audio description and public-facing delivery systems is critical. The UniD app, for example, has a straightforward navigational system and visual presentation designed to serve first the screenreaders and other voice-over types of software systems that people who are blind use. While the UniD team wants anyone to be able to access this material, and to find it useful, the primary focus is first on ensuring people who are blind or who have low-vision can easily navigate the mobile application and quickly find what they are looking for. UniD prioritizes these users in the creation of a delivery system and prototyped the system extensively with users to ensure usability.

Community Engagement and Collaboration

Whether an organization chooses to use UniD's platform or to create their own, cultivating a community of audio description writers and users is essential. To promulgate audio description content, organizations need to understand its value and know how to produce it. This effort does not stop at the baseline availability of audio description. UniD also has ambitiously pushed for qualitative improvements in the field. While awareness of audio description has grown, public understanding and acceptance are not nearly as ubiquitous as those for captions for people who are d/Deaf and hard of hearing. Unfortunately, the lack of audio description in so many heritage venues means that people who are blind or who have low vision may not feel that these are welcoming places where they can have a meaningful experience. Promoting audio description in general and with the community communicates the organization's intent to welcome these populations alongside everyone else.

Reaching out to the community is not just about promotion of a site's accessibility features and services. "Nothing About us Without Us" is a commonly heard mantra within the Disability Community, particularly in the United States. Creating audio description without user input can result in ineffective content that might also be disengaging. While user feedback and formal evaluation can gauge effectiveness, co-creation, like how UniD does it, cultivates deeper connections and impacts.

We recommend starting with users within the local community around a site and fostering a relationship built on compassion and trust. People want to support their nearby national parks, and national parks want to welcome their local communities. Also, we recommend reaching out to the leadership in organizations run by and supporting people who are blind or who have low-vision. It is inevitable that not all people will respond positively or in the same way when listening to descriptions. Having a large group to determine where and how preferences might be trending along with others who are speaking from personal experiences and a collective understanding can help when an audio-description content creator must make a decision to go in one direction or another. Lastly, create a budget to compensate people for their time and efforts and think about other ways to make the collaboration worth their while. For example, when studying how gender might be represented in audio description, Dr. Oppegaard took portraiture photographs of individuals who are blind or who have low vision. He then collaborated with these individuals to craft their descriptions, which included how they chose to describe their appearances, including providing cues about age, gender, and ethnicity. Dr. Oppegaard then shared these photos with the portrait subjects, who could then freely use them in their personal and professional lives. While Dr. Oppegaard had a research aim in this project, he constructed his research in a way that also gave something of value back to the users with whom he was collaborating.

Budget

The UniDescription project initially received $278,300 from the National Park Service to describe 40 brochures and create a digital system to store, maintain, and add to the collection. This seed money allowed the project to conduct research on off-the shelf tools, audio description practice and theory, and the design approach to creating NPS unigrid brochures. When no readily available audio-description editing platforms for static media were found, these funds were also used to create the foundations of this much-needed production and dissemination system, followed by a pilot workshop to test the platform and to experiment with the process for collaborating with parks to write audio description. To build out the platform and the Descriptathon workshop experience more fully, the NPS modified the agreement with an additional $70,133.

With 40 brochures described and the digital system built, the goals of the original project were achieved. Yet interest in the project was growing. It was at this time that Dr. Oppegaard and his research team began to cultivate a partnership with the American Council of the Blind that led to numerous grants from Google totaling $400,000. To further investigate and research all aspects of audio description and to further best-practice recommendations, Dr. Oppegaard and the University of Hawaii also received a $10,000 grant from the National Endowment for the Arts and a $296,000 grant from the National Endowment for the Humanities. Along with these grants the NPS has continued to fund the project. To date, the NPS has contributed $573,000.

To date, 199 NPS audio described brochures are available to the public to access and 13 audio described brochures from around the world at similar organizations have also been completed. This includes brochures for the U.S. Fish and Wildlife Service, Parks Canada, and Parks UK.

Links

The UniDescription Website is the primary resource for all information about the project, including published research, media coverage, awards, best practices, trainings, and the descriptions: UniDescription - Home.

Within that website, some links of interest include pages about:

- **Research**
  https://unidescription.org/research
- **Impact**
  https://unidescription.org/impact
- **The Online Academy**
  https://unidescription.org/unid-academy
- **The Online Library**
  https://unidescription.org/unid-library
- **A Descriptathon Overview**
  https://unidescription.org/descriptathon
- **An Oral History**
  https://unidescription.org/backstory
- **Media Coverage**
  https://unidescription.org/backstory
- **A Fedstival Video Presentation on the Project**
  https://www.youtube.com/supported_browsers?next_url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3DnxbgvqkWLh0

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