Park Visitors' Interests

iSWOOP Instrument Development and Piloting 2018-2019
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Understanding visitor interests is key to maximizing STEM learning in national parks. Responding to those interests, tailoring interactions to address them is part of meeting the 21st century interpretive standards for delivering audience-centered instruction. What if interpreters had a convenient, context- and place-appropriate way to elicit visitors' long-term interests? Would the same approach work for English-speaking and Spanish-speaking families? During the National Science Foundation-funded iSWOOP project (iswoopparks.com), a team of researchers developed and piloted two interview instruments for eliciting the interests that visitors bring to national park experiences. Twelve bilingual, bicultural professionals provided input that shaped the Spanish version of a poster vote activity, accompanying questions for visitors, and guidance for data collectors. The team of interviewers using English and bilingual versions had reflective, often generative conversations. This report includes their recommendations and insights as well as descriptions of the interview tools and the piloting process involving 63 interviews with families at seven parks and natural areas across the country during 2018 and 2019.

Introduction

Adults and children who visit a national park are interested in seeing new things, spending time with their families, learning more about the natural world, having an immersive experience, getting exercise, and more. They may also have specific topics of interest, like volcanic rocks, butterflies, desert plants, or Civil War history or interdisciplinary interests such as understanding impacts of climate change. These interests, in turn, play a role
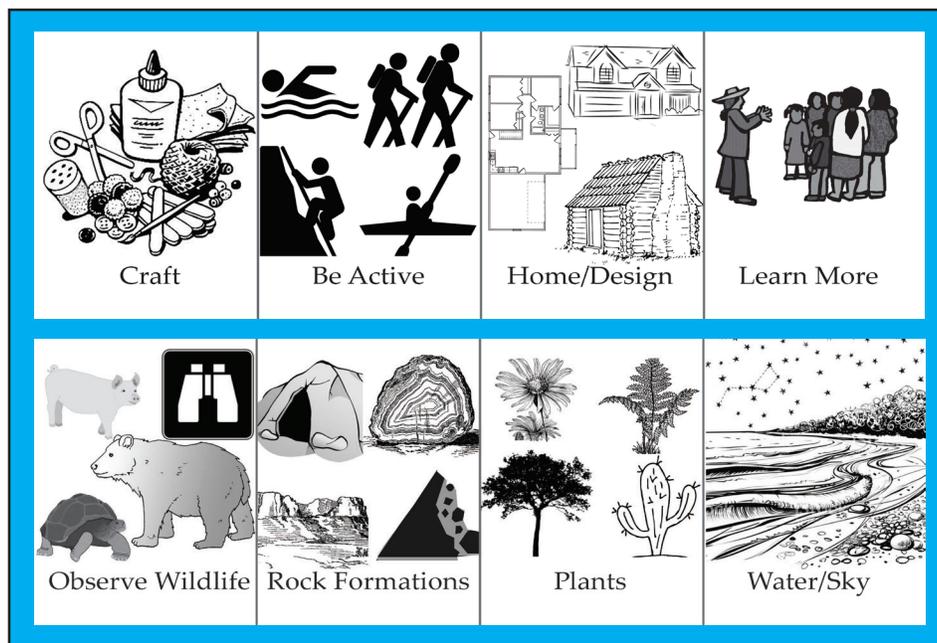

Figure 1: The images above are part of the poster to which visitors added stickers reflecting their interests.

in shaping what visitors do, how they engage, and what they take away from their experiences. Research on teaching and learning, both inside and outside of school, has demonstrated that interest is a central component of lifelong learning, motivating individuals to attend to experiences in the moment and to continue to seek out new learning experiences as their interests grow. For more information about the concept of interest, see https://www.informalscience.org/what-stem-interest-0.

Challenges

Gathering information from park visitors about their interests is not always straightforward. Individuals and groups come to parks to have a fun, satisfying, and inspirational experience, not to participate in research or evaluation. Some visitors are on the move and have little time to share their perspectives about their own interests. Since visitors often come in social groups to spend time with family and friends, stopping for 10 to 15 minutes for an individual interview conflicts with an important goal of the park visit. Furthermore, the concept of interest can be abstract. Visitors put on the spot may struggle to summon a list, or they may have trouble explaining how their interests connect with parks and natural areas. The opposite can also be a problem: an enthusiastic hobbyist might

Figure 2: Spanish speaking families gather for an activity at the Gila Cliff Dwellings National Monument

give too much detail. Finally, federal employees have to comply with the Paperwork Reduction Act, so formal surveys of visitor interest would need official approvals.
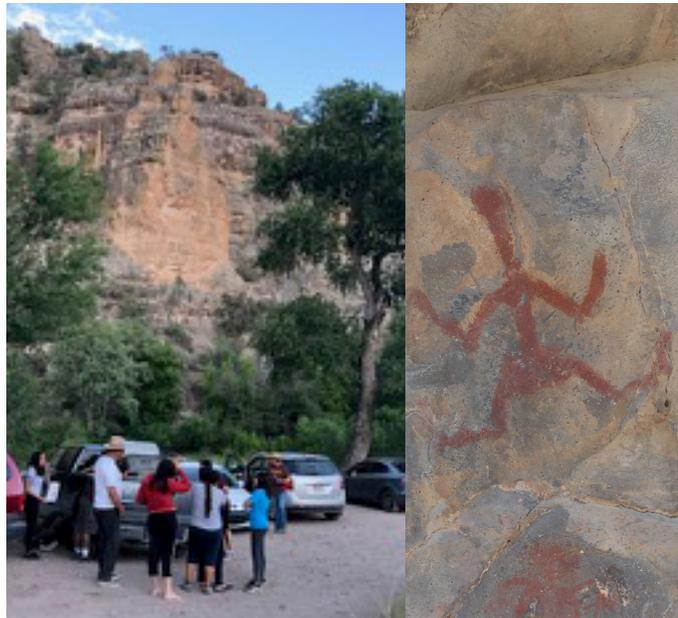
Table 1. Overview of data collection by site and instrument		
Site	**Poster Vote**	**Card Sort**
Drumlin Farm	5	5
Elephant Butte Lake Park	1	6
Acadia	7	6
Sandy Creek Nature Center	5	3
Indiana Dunes	5	4
Total	**23**	**24**

Note. Data collectors were limited to collecting no more than nine interviews per site, per instrument in accordance with the Paperwork Reduction Act.

For more information, see iSWOOPparks.com or contact martha_merson@terc.edu

Goals

iSWOOP is a four-year NSF-funded effort to make park-based research an interactive part of the visitor experience. To connect park-based research with visitors' interests, iSWOOP leaders, researchers, and advisors envisioned a proven strategy for eliciting visitor interests that is at once a positive experience for visitors, capable of providing useful information for rangers tailoring programming to their audience, and useful for researchers investigating the intersection of park programming and visitor interests. iSWOOP leaders set out to pilot and refine an efficient way to surface and be responsive to visitor interests that fits within the constraints of the setting and feels appropriate to the social interactions visitors expect to have in parks with each other and with interpreters and that would advance or at least not detract from interpreters' mission to make and solidify emotional and intellectual connections to natural resources. iSWOOP leaders hypothesized that an activity like sorting cards or using sticky dots to vote would be an effective way to launch an exchange about interests. At the same time, they were skeptical that the concept of "interest" would be evocative across culture and language differences. So an iSWOOP team drafted and piloted instruments to answer the question: "What prior interests, and in particular those related to science, nature, and place, do visitors bring with them to national park visits?"

Figure 3: Sample cards. Cards marked D, E, and F represent the set of park-related interests.Cards marked Transit and Travel are from the set on personal interests

Methods

The instrument development process was conducted in two phases. In the first phase (Summer 2018), iSWOOP leaders and partners developed two interview instruments in English and convened a team of data collectors to pilot them. In the second phase, (Winter-Summer 2019), to insure that the foundational concept of "interests" translated across cultures, iSWOOP leaders 1) assembled a new team with Spanish-speaking researchers (/translators) with ties to Spanish-speaking communities, 2) sought advice from bilingual professionals and then 3) piloted a bilingual version for Spanish-speaking park visitors. After each round of data collection was complete, team members shared their impressions of the experience for families, the depth and quality of data collected, and their reflections on the research protocol. After reviewing the interview notes and reflections and using these to identify lessons learned, Pattison and Merson updated the interview protocols, accompanying materials, and discussed recommendations for researchers and practitioners.

Data collection and analysis methods for each phase are described below.

Phase 1

Drafting instruments. The iSWOOP team drafted two pilot interview instruments (see final versions attached). The first instrument ("poster vote") invited individuals and families to place three stickers on a poster of images to represent the topics and activities that motivated them to visit the park that day. The second instrument ("card sort") invited families to pick from a series of images on cards. These activities were then used as catalysts for discussion about visitor interests, both specific to the park and in general.

Recruiting participants. The project team piloted the two instruments at five different parks across the country. In Phase 1, the data collectors used a systematic sampling approach and prioritized recruiting multigenerational, English-speaking families. Table 1 (p. 2) outlines the number of completed interviewers collected at each site for each instrument version during phase 1. In total, there were 47 completed interviews across the five sites, evenly distributed across the two interviews. (Table 1 also shows the number of family groups recruited on site and recruited in advance at each of three sites during Phase 2.)

Phase 2. Translation, Consultations, Revisions, Piloting

Drafting an instrument. The bilingual development process was more complex than a simple translation process. After updating the poster vote activity and accompanying questions, Pattison and Merson consulted with five bilingual and bicultural researchers (three at TERC and two contractors) to create a Spanish version. Before testing the new version with Spanish-speaking families. The team identified bilingual and bicultural professionals who were highly familiar with the perspectives and experiences of Spanish-speaking families. They were asked to provide critical feedback on the interview questions and structure. The bilingual professionals were asked review the script before meeting with a team member and to answer four questions: (a) What stood out for you about the interview, both in terms of what made sense and what could be improved? (b) How accessible do you think this interview will be for Spanish-speaking families visiting national parks and other nature areas? (c) What are ways the interview activities and questions could be more accessible and relevant to these families? and (d) Are there other suggestions you have for how to best conduct these interviews with Spanish-speaking families, beyond the question wording and interview structure?

After the interviews were complete, the team reviewed notes from the conversations and identified themes and potential improvements. Once updated, in accordance with the feedback, the team began planning for a pilot of the bilingual version of the interview.

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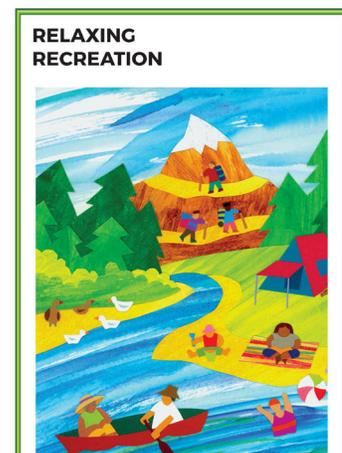
Examples of visitors' interests included hiking and exercise, which were closely connected to seeing wildlife and exploring. Visitors said:

✓ Hiking without worrying about venomous snakes and alligators.
✓ I like the wilderness hiking a lot.
✓ Hiking is good. Seeing wildlife.
✓ [I like to] Exercise. Explore.
✓ … Interested in getting exercise.
✓ Came to be active.
✓ Wanted a place to run. Look for animals.

Figure 4: Examples of interests from visitors and a popular card

Recruiting participants. To insure a number of Spanish-speaking families would be present, team members organized events and invited families to the sites in coordination with local schools or community organizations. This approach was in line with bilingual colleagues' recommendations as a strategy for building trust with Spanish-speaking families prior to the interviews. The organized events varied by site but all included a family-friendly activity run by staff members at the park, time for free exploration and relaxation for participants, coordinated transportation, and time to enjoy food together. In total, members of 16 Spanish-speaking families at three different natural areas participated (See Table 2).

Table 2. Overview of data collection by site

Site	Poster Vote
Franklin Park, MA	6
Gila Cliff Dwellings, NM	9
Indiana Dunes N.P.	1
Total Interviews	**16**

Figure 5: Youth joyfully add stickers to show their interests.

Summary of Findings

Phase 1 Summary of Findings

Below we present lessons learned, as well as general reflections on the process and protocols. In Phase 1, the team found that both protocols seemed to be enjoyable for participants, however, the poster protocol was easier to use and elicited quality information about visitor interests in a shorter amount of time than the card sort activity.

Reflections on poster vote instrument. This instrument was successful at both engaging family groups and eliciting in-depth information about visitor interests. The data collectors reported that the interview length felt reasonable and that the combination of one interactive section (choosing where to place the stickers) followed by several interview questions made for a simple, straightforward interview process. Participants seemed to enjoy discussing the different options and placing the stickers.

Data collectors did offer several possible improvements to the instrument, materials, and protocol, including: narrowing the number of choices (some groups took a while to make their selections); experimenting with the relative placement of words and pictures (to make sure all visitors noticed the words); eliminating questions about sticker selections that other groups had made (since these did not seem to elicit much discussion with visitors); and rewording questions to explore connections with science at the park. The team also noted ways to extend the interview, such as using different colors of stickers to signify different types of visitor choices.

Reflections on card sort instrument. The card sort activity and protocol were not as popular with data collectors as the poster vote instrument. The cards were hard to manage (especially with bad weather or in windy or rainy outdoor settings) and the interview felt long, since it included two

different interactive segments (sorting the personal interest cards and then the park-related cards). This meant that data collectors had less time and flexibility to probe visitor answers. However, the cards did inspire considerable discussion among visitors, and adults seemed skilled at interpreting the meaning of the illustrations for children.

Data collectors noted a number of possible improvements, including: finding different ways of managing the cards and dealing with rain and wind; starting with the park-specific cards (which seemed more immediately relevant); and considering asking visitors to do only one card sort (to decrease the length of the interview and avoid making the process feel redundant for participants).

Sample of data collected. After visitors either selected cards representing their top three interests or added stickers to a poster, thereby voting for their top three interests), they answered versions of these questions:

– What interests you about
   this park? What motivated you to visit this particular park?

– Why is this a good place to explore your interests? What are
   ways the park could better support your interests?

– Have you found any new interests during your visit today?
   Do you hope to find new interests during your park visit?

A sample of the responses revealed visitors' motivation for and commitment to outdoor recreation. Simultaneously, visitors expressed interests in immersive activities. This was true for national park visitors on an extended vacation and visitors to their local farm and nature center.

While many of these comments will be no surprise to staff, the comments could influence how offerings with park-based science are framed. For example, connecting stories of park-based science to hiking could expand the potential audience by piquing visitors' interest in hiking in the footsteps of a scientist or hearing stories of scientists climbing Sargent Mountain with coring equipment and makings of a raft. Rather than leading with findings about plant survival and climate change, interpreters could introduce a PhD student who hiked three mountains, not once but twice each twice a week.

Data collectors noted visitors' responses to the question of how the park could support their interests.

Examples included:

- ✓ Service learning or something educational.
- ✓ Short-term data collection, a science volunteer opportunity.
- ✓ Demo Abenaki style cooking.
- ✓ More art to take home.
- ✓ Craft activities.
- ✓ Want to observe animals.
- ✓ Excited about scavenger hunt.
- ✓ More arts and crafts.
- ✓ Do a farm to table program.
- ✓ Cooking classes for kids.

Figure 6: Examples of visitors' ideas for how the park could support their interests

Phase 2 Summary of Findings

In February 2019, the team collectively reviewed and reflected on the feedback from the interview with the bilingual colleagues. Acknowledging that the 2019 political climate could make prospective interviewees reluctant to participate, the bilingual professionals made several specific suggestions to overcome this potential barrier. Every bilingual professional's

comments were geared to making the interview conversational. They discouraged reading from a script. Bilingual colleagues emphasized that the skills of the interviewer are very important when conducting interviews with Spanish-speaking families, who may begin the conversation with low levels of comfort and trust.

Reflections on recommendations for establishing rapport and building trust. While they offered some suggestions for rewording questions and there was much back and forth about the best translation for the word "stickers," the majority of their comments focused on the introductory phase. Bilingual colleagues recommended that interviewers:

– Include a slow, informal start to the conversation (e.g., small talk, icebreaker questions, activity, introducing interviewer and where he or she is from, building rapport).

– Embed the interview as part of an educational activity or social event to establish a comfortable, non-judgmental setting for the interview.

– Find ways of introducing the role of the interviewer as an educator or a person focused on "helping people," to avoid possibly intimidating terms like "researcher" or "investigadora," which sound formal or official.

– Emphasize the safety and anonymity of the data collection and explain how their data will be used.

– Tap into the cultural value of helpfulness. Lead with the idea that visitors' comments will help be helpful in making the park programs better, for example.

– Avoid being specific about how long the interview will be (so that families don't get annoyed if it goes slightly long).

> *We don't see that very often [questions like:] How do you connect your experience? What attracted you? I like that.*
>
> *You care about me and my family. I felt connected.*

During subsequent revisions, interviewees' suggestions for wording, sequence, and structure were integrated, e.g., making the Spanish translation more natural and conversational. A few changes were made to the poster images, including separating water and sky. Guidance to interviewers was updated to encourage being flexible with question wording, especially if a family were to have trouble understanding or responding.

✓ The hands-on activity was offered with no pressure to participate.
✓ Group members translated for less fluent participants.
✓ The activity was accessible to youth of all ages and not reliant on literacy.
✓ Park personnel (young women and men of color) modeled the activity and interacted with participants.
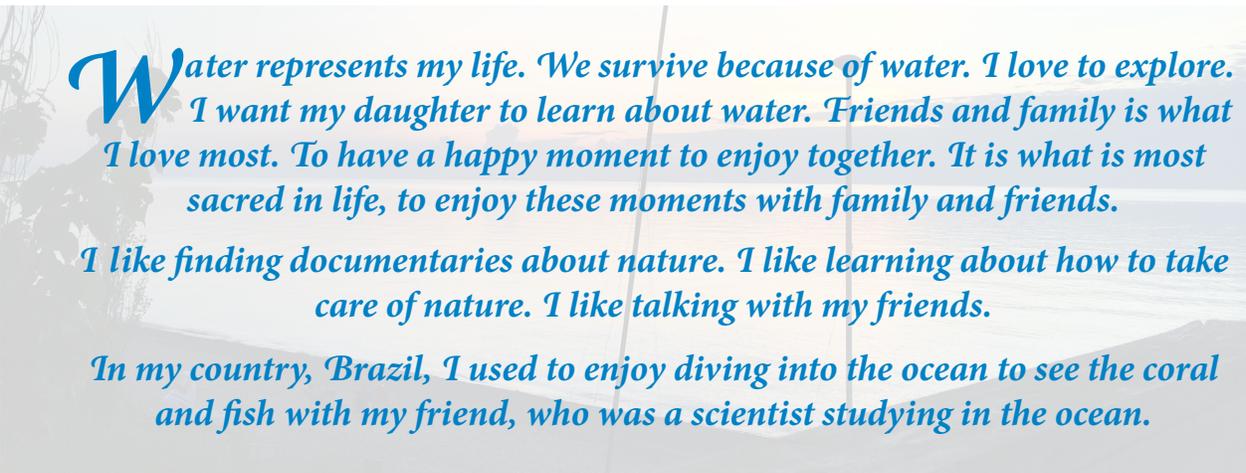
Figure 7: Aspects of the experience that made the interviews comfortable for Spanish-speakers

To insure responses from several families, the iSWOOP team began coordinating visits for family groups to nearby parks where they could be interviewed. Team members made visits and had phone calls with park personnel to make sure that an age-appropriate activity would be offered to families. They requested bilingual materials and asked if bilingual staff could be present (though parks weren't able to accommodate these requests).

Reflections on the interviews with Spanish speaking families. In retrospect, team members agreed that the park-led activities contributed to a relaxing experience.

Data collectors took time to establish trust before starting the interview, allowed younger children to play while incorporating older children into the interview and activity, and made sure the interviews happened in a comfortable and safe environment. As evidence that the interviews were successfully eliciting thoughtful responses, the team noted:

- Many families made unsolicited comments expressing that they appreciated the interest in their perspectives on the park;
- Families took time to make sticker selections; and
- Some requested more stickers, indicating they were taking their selections seriously.

Water represents my life. We survive because of water. I love to explore. I want my daughter to learn about water. Friends and family is what I love most. To have a happy moment to enjoy together. It is what is most sacred in life, to enjoy these moments with family and friends.

I like finding documentaries about nature. I like learning about how to take care of nature. I like talking with my friends.

In my country, Brazil, I used to enjoy diving into the ocean to see the coral and fish with my friend, who was a scientist studying in the ocean.

Sample of data collected. As predicted by the bilingual professionals, when comfortable with the interviewer, families gave in-depth responses about their park-related interests.

In contrast with the interviews with English speaking families who chose activities like hiking and crafts, many participants focused on "family and friends" and relaxing in nature when talking about their reasons for coming to the park.

General reflections and recommendations

The experience of piloting demonstrated that the poster vote met the goals and priorities iSWOOP set:

- Data from the instruments should potentially help national park interpreters and program staff make stronger connections between their content delivery and visitors' prior interests during conversations or programs. The poster vote opened discussions about recreational and STEM learning opportunities at the park.
- The pilot instruments should be suitable for multi-generation groups and adult-only groups. The interview was most successful with adults and children of elementary school age or older, but even pre-school aged children were able to participate at some level.
- The pilot instruments and protocol should be engaging and interactive in order to reinforce a positive experience, including supporting a popular visitor interest in spending time with family and friends. During piloting, many families expressed

appreciation for the interviewers' and parks' interest in their perspectives, which may be a motivator for them to return.

– The Spanish version shows promise for being culturally and linguistically relevant to Spanish-speaking visitors. If rapport is established, time taken to build trust, and the purpose is established as helping improve programs, the poster vote activity can generate rich conversations with this audience.

For evaluators and researchers using the protocol to study visitor interests, there are data collection and analysis decisions to be made. Making video or audio recordings, which capture visitors' verbatim comments could be helpful, though for Spanish speaking families, introducing a written record may result in declines to participate or less forthcoming responses. Similarly, capturing more data about visitor demographics and relationships within groups could be helpful, but may increase suspicions about the purpose of the interview. In the pilots, the interviewers made an effort to include the whole group in the interview process rather than focusing on a single adult family member. As written, the protocol assumes the entire family is the unit of analysis.

Figure 8: Youth and adults participated in optional activities that park staff led to enrich the park experience

Instrument users will want to discuss how contextual factors like the time of year or location will influence the pool of visitors, their interests and motivation for visiting. The team periodically found that visitors were unaware of park-sponsored programs related to their interests. Before using the activity and questions, one would want to decide to what extent the data collectors step out of their role as interviewers to provide information about the park. In some locations instrument users will find first time visitors at the beginning of their visit. Those interviews will yield information about interests, but not rich experientially-based detail about how the park connects to those interests. In other cases, an interviewer setting up near a trailhead vs a historic house, during foliage season vs wildflower season will likely capture responses that reflect the place and season. The data collection setup can also influence the length and nature of the interviews. A place for the visitor to sit might result in a longer interview.

We found that probing both for interests to pursue in the park as well as day-to-day interests is important because the motivations for park visits for both English speakers and Spanish speakers are often rooted in a place-based way of being—being active or being relaxed, finding a place for a physical challenge or a place to unwind and re-charge. These are not lifelong topics for STEM interest development, though they are important reasons for making a special trip to a park. Of course motivations can be connected with interests like birding or identifying edible plants. Hiking or relaxing by the water can spark curiosity questions. After satisfying their motivating impulse for visiting, it is likely that then there is an openness to learning new things.

iSWOOP advisors suggested ways practitioners could use the interview tool to inform their work:

– Interpreters could integrate the questions at the beginning of a program (as a follow up to questions, such as, "Where are you all from?") and then use visitor responses to tailor their presentations.

- Parks or park divisions could use visitors' responses to inform annual interpretive planning.
- Parks interested in increasing local community engagement could use the tool to open conversations with local residents about how the park could proactively address and foster their interests.
- Visitors' responses could inspire programming and help the communications and social media staff target promotion efforts to connect interested audiences with existing offerings.

The team also identified aspects of the interviews that they would consider before using the instrument in the future. These included:

- Asking visitors about expectations for the park visit and their prior experience with parks (possibly even the opportunities they have and had to spend time outdoors, to dive, climb, or grow food).
- Asking visitors how they think about science (or nature, natural environment, parks, etc.), since their answers will shed light on responses to other questions.
- Adding a category on the poster to represent mental health and the opportunity to recharge, unwind, or find spiritual renewal, since these were common themes in the families' responses.
- Replacing images with photos from the park.
- Using a prompt that specifically encourages families to tell stories.
- Exploring the use of other artifacts as catalysts for conversations with families, such as maps of the park or photos from visitors' phones, since something to touch or look at together is a shared experience that adds to the intimacy of an exchange and builds trust.

Figure 9: A group on a ranger-led hike discusses park-based research

- Considering how to frame the interview for visitors that have not experienced much that the park has to offer.
- Refining techniques for involving youth, e.g., giving the parents the poster and the children the stickers, positioning youth as data collectors and co-investigators or "scientists" within the conversation.
- Asking visitors what questions they would have for rangers or park staff about the park-based science; rewording a question that could have implied families ought to be interested in order to not look ignorant about the park-based science.

Conclusions and Next Steps

The iSWOOP leaders set out to pilot and refine an efficient way to surface and be responsive to visitor interests that fits within the constraints of the setting and feels appropriate to the social interactions visitors expect to have in parks with each other and with interpreters. iSWOOP's approach to developing an activity-based interview involved piloting in English, revisions to the protocol and then many iterative steps for development of the companion for Spanish-speaking families. The piloting process highlighted the promise of investigating the interests of park visitors through an interactive, family-friendly interview protocol. Of the two versions piloted, both provided data on visitor interests and connections to the park. The poster vote activity became the focus of further development because the materials and structure were logistically easier for data collectors and participants. Whereas the initial impetus for developing a Spanish version stemmed from concern about transcending cultural associations with the idea of interest development, that turned out not to be the main hurdle. Instead, setting a welcoming tone, establishing trust, and setting visitors at ease so that they were forthcoming with their areas of curiosity, interest, and motivation.

As park rangers across the country (re)commit to audience-centered experiences, sharing strategies and tools for eliciting long-term interests is practical—this proven tool can be used off the shelf or minimally adapted allowing researchers and interpreters to elicit visitors interests. Interpreters can then spend their planning time on crafting programs, experiences, and talking points to meet a variety of needs. Meeting visitors' interests reinforces and potentially increases the value visitors find in parks, which is vital to the successful preservation and management of land set aside for preservation, protection, and enjoyment of current and future generations.

iSWOOP staff invite researchers and practitioners to adapt the tool to their own goals and welcome partnerships with interpreters who want to experiment with the instrument.

Acknowledgments

Additional Resources

For reading related to STEM interest and informal learning environments like parks and science centers, see

http://www.informalscience.org/news-views/interest-and-motivation-are-linked-science-learning-and-future-career-choices