The IAGD's GSA Connects 2025 Guide

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Accommodation Information

At the Convention Center

GSA offers many services and accommodations to help ensure universal access to the conference for all participants. The linked webpage provides instructions on how to request accommodation, reserve mobility scooters, set up assisted hearing devices, and arrange child and pet care. It also contains information about service animals, dietary considerations, real-time transcriptions, and accessibility locations in the convention center.

Outside of the Convention Center

It can be stressful to find places to eat before, during, and after conferences each day. We've compiled a non-extensive list of restaurants in San Antonio, organized by dietary restriction. Most of these establishments are located near the convention center.

Vegetarian Restaurants

- Sweet Yams - 218 N Cherry St, San Antonio, TX 78202
- Pharm Table - 611 S Presa St Suite 106, San Antonio, TX 78210
- Plantaquería - 124 Broadway, San Antonio, TX 78205
- Revolución - 300 E Houston St Suite 105, San Antonio, TX 78205
- Box St. All Day - 623 Hemisfair Blvd, Ste 108, San Antonio, TX 78205
- Rosario's Comidamex & Bar - 722 S St Mary's St, San Antonio, TX 78205
- Green Vegetarian Cuisine - 255 E Basse Rd, San Antonio, TX 78209
- The Magpie - 1602 E Houston St Suite 106, San Antonio, TX 78202
- Thai Lao Orchid - 116 Broadway, San Antonio, TX 78205

Gluten-Free Restaurants

- Sweet Yams - 218 N Cherry St, San Antonio, TX 78202
- Plantaquería - 124 Broadway, San Antonio, TX 78205
- Box St. All Day - 623 Hemisfair Blvd, Ste 108, San Antonio, TX 78205
- Rosario's Comidamex & Bar - 722 S St Mary's St, San Antonio, TX 78205
- Viva Vegeria - 1422 Nogalitos St, San Antonio, TX 78204

Halal Restaurants

- Zaffran Delight - 136 Main Plaza, San Antonio, TX 78205
- Cafe Dubai - 2711 S Flores St, San Antonio, TX 78204
- Pinkerton's Barbecue (**by request**) - 107 W Houston St, San Antonio, TX 78205

Vegan Restaurants

- Sweet Yams - 218 N Cherry St, San Antonio, TX 78202
- Plantaquería - 124 Broadway, San Antonio, TX 78205
- Revolución - 300 E Houston St Suite 105, San Antonio, TX 78205
- Viva Vegeria - 1422 Nogalitos St, San Antonio, TX 78204
- Vegan Avenue - 2512 N Main Ave, San Antonio, TX 78212
- Thai Lao Orchid - 116 Broadway, San Antonio, TX 78205

Kosher Restaurants

- Yummy Kosher Grill - Oak Grove Dr #15511, San Antonio, TX 78255
- The Shabbat Market - 1246 Vista Del Rio, San Antonio, TX 78216
- H-E-B Alon Market - 8503 NW Military Hwy, San Antonio, TX 78231

Highlighted Events

We perused the conference program and selected presentations that might be of particular interest to the IAGD community. Look through the entries below and make sure to attend any that you're interested in if you can!

Please note that all times are in Central.

IAGD Booth

Come see us at booth #815 in the exhibit hall! Our schedule is as follows, but may change on the fly based on volunteer availability and community demand:

- Sunday, October 19 - 4:30–7:00 P.M
- Monday, October 20 - 11:30 A.M.–6:30 P.M.
- Tuesday, October 21 - 10:00 A.M.–1:00 P.M., 2:30–6:30 P.M.
- Wednesday, October 22 - 10:00 A.M.–2:00 P.M.

Sunday, October 19

Expanding Neurotypical Borders: Building a Future of Inclusion with Disabled and Neurodivergent Perspectives in Geoscience

- 2:30–6:00 P.M.
- Stars at Night Ballroom 2/3
- Pardee keynote symposium
- **Description**: We invite contributors and audience participants of all backgrounds to learn, lead, and celebrate disability and neurodivergence as core to our fields and our collective and intersectional science identities.

Disability Inclusion and Geoscience: The Law and Policy Governing Fair Treatment of People with Disabilities and the Importance of Disability Justice and Equity in Scientific Fields

- 2:50–3:10 P.M.
- **Authors**: Kelly Elizabeth Israel & Taormina Lepore
- **Abstract**: On July 26, 1990, President George H.W. Bush spoke of a "shameful wall of exclusion" that would "finally come tumbling down," referencing the segregation of and discrimination against people with disabilities in all aspects of public life. He had signed the Americans with Disabilities Act (ADA), one of the two most important civil rights laws for people with disabilities. Scientists with disabilities offer unique perspectives due to their cognitive, physical, and cultural differences, creating a more equitable and creative research and learning

environment. Nonetheless, thirty-five years after equal treatment became law, scientists with disabilities face uphill battles to acquire reasonable accommodations, access facilities and tools, and secure grant funding. Geoscience is one of the least diverse and accessible scientific fields, although significant progress has been made due to the advocacy of disabled geoscientists. During the COVID-19 pandemic, remote work and hybrid conferences expanded the participation of geoscientists with disabilities. However, more work is needed to dispel myths and break down barriers about disability in geoscience. In our talk, we will discuss how to increase equity and diversity in geoscience by fully implementing the ADA and another key civil rights law, the Rehabilitation Act of 1973. Our talk will describe legal requirements, highlight key areas where STEMM fields have failed to properly implement the law, and explain how geoscience can rectify some of the most pressing concerns of scientists with disabilities. We emphasize Universal Design for Learning principles for accommodations in academic contexts, as well as defaulting to disabled geoscientists' preferred accommodations and methods of communication. We use a social and Disability Justice model of disability that is inclusive of multiply marginalized disabled voices. It is our hope that geoscientists can acquire principles from our talk which they can propose to decision-makers in their workplaces and classrooms, expanding the kinds of scientists who can explore the vibrant geological world and therefore participate in geoscience more fully.

Making Space for People with Communication Disorders in Geoscience Presentation and Teaching

- 3:15–3:35 P.M.
- **Author**: Mandy Abel-Zurstadt
- **Abstract**: As is true in many other science, technology, engineering, and mathematics fields, geoscience emphasizes public speaking from the classroom to conference hall. Geoscience also encourages interactions that require speaking, such as consistent collaboration and networking, such that it can be difficult to succeed as a student or scientist without engaging in these activities. These expectations do not just present barriers for the d/Deaf and Hard of Hearing community, and non-native English speakers; they also negatively impact people with communication disorders (CDs). Communication disorders that affect a person's ability to produce speech include aphasia, misarticulations, and spasmodic dysphonia. Other disorders, such as situational mutism, can have similar effects on speech. People with these disorders may be hesitant to speak in social situations due to stigma. They may not pursue speaking-related opportunities for personal and professional growth, and may cause themselves

various degrees of distress by engaging despite discomfort. The expectation of polished presentations given in “standard-sounding” speech can put undue stress on people with CDs due to the increased cognitive load of adapting their speech to be more intelligible than is natural for them. Stress may be caused by over-practicing their presentations, adaptively reacting to their own speech to improve fluency, or worrying about negative perceptions from listeners. Therefore, their mental health and/or sense of belonging may suffer over time, but the experience of people with CDs can be improved through acceptance and allowing for full and safe participation in speaking activities. Opportunities to speak should not be eliminated but the expectation of public speaking must be adjusted and accommodated to allow for non-standard speech as well as other forms of communication like text, text-to-speech, and recorded speech. Live captioning is also an accessible option if a speaker is concerned about their understandability. Strict presentation time limits should be reconsidered, specifically for speakers who take longer to present because of CDs, such as those who take frequent pauses, struggle to find their words, or stutter. Full acceptance of people with CDs in geoscience requires good speech-related disability etiquette and welcoming of all types of speech patterns in presentation, lecturing, and social interaction. To create truly anti-ableist geoscience spaces, we must engage with multiple forms of communication and incorporate the concept of disability time into them.

Interactive Live Science Content (ILSC) on Twitch: using a popular gaming platform to expand access to free-choice learning

- 5:00–5:15 P.M.
- Room 301A
- Oral presentation
- **Authors**: Melissa A. Scruggs, Pamela Gay, & Alyssa Kaess
- **Abstract**: After recent dramatic shifts in media consumption habits, streaming now surpasses traditional broadcast and cable television. Nearly 30% of internet users watch livestreamed content weekly, with platforms such as Twitch.tv, YouTube Live, and Facebook Live offering real-time, participatory experiences that fundamentally differ from traditional "post and comment" social media. Twitch.tv explosively diversified during the COVID-19 pandemic, with educational science-related content expanding alongside its gaming roots. As online instruction and interactive broadcasting became more familiar to the public, livestreaming evolved into a new mechanism for informal, self-directed, and interest-driven learning. This study examined Interactive Live Science Content (ILSC) on Twitch.tv as a form of free-choice learning—learning that occurs outside of formal settings, driven by curiosity, and shaped by individual access

and engagement. We conducted a mixed-methods survey and report findings from 182 qualified respondents who had a registered Twitch.tv account and had watched at least one stream featuring science content on the platform within the past six months. Participants answered a combination of categorical, Likert-scale, and open-ended questions addressing their Twitch.tv viewing habits, consumption of science content, familiarity with and perceptions of science content, learning outcomes, and attitudes toward expertise and trust. Results suggest that ILSC reaches well beyond traditionally targeted educational audiences: 33% of respondents primarily watch gaming content on the platform (rather than science), and a statistically significant number reported that their interest in science only developed in adulthood. Respondents reported significant gains in comfort with moderate-to-advanced science topics, greater understanding of the peer-review process, and increased visits to museums after regular ILSC participation. We also find that ILSC significantly influences perceptions of what a scientist looks like, and increases trust in individual scientists and science communicators. However, respondents reported decreased trust in investigative journalists and mainstream media following exposure to ILSC. Expertise was widely valued by viewed, though transparent sourcing remained important when content creators were not domain experts. Discover of ILSC occurs primarily through platform algorithms or peer sharing—also rated as the most effective method to find new science content. These findings position ILSC on Twitch as a powerful tool for broadening participation in free-choice learning, increasing access to scientific thinking, and reaching diverse, self-motivated learners outside of traditional educational spaces.

Monday, October 20

Using the Construct of Novelty Space to Make Sense of Experiences on Field Trips as a Geologist with Disabilities

- 8:55–9:10 A.M.
- Room 301B
- Oral presentation
- **Author**: Caitlin N. Callahan
- **Abstract**: In geology, field trips provide opportunities for students to learn the discipline by communicating through its language and engaging in its practices, all done far from the confines of the classroom. Novel aspects of field experiences can variably be a benefit or a barrier to a student’s learning, depending on the student and the situation. The construct of novelty space is a

useful framework for describing the different ways that such trips can involve the unfamiliar; these include the cognitive (e.g., the necessary knowledge of relevant concepts and skills), the geographic (e.g., the location or series of locations), the psychological (e.g., the clarity of expectations for student performance), and the social (e.g., student-to-student or student-to-faculty relationships). In this project, I use novelty space as a way to complete an autoethnography about my experiences on field trips as a geologist with multiple disabilities. This approach involves examining cultural norms by explicating one's own stories. It is a method that excels in making visible that which can escape observation. When I first encountered geology as an undergraduate student, I perceived the various novelties of the discipline only as barriers. I had arrived at college carrying the responsibilities and worries of life-long medical concerns as well as hearing and learning disabilities. I knew how to advocate for myself; I lacked trust in how that advocacy would be received by faculty or peers. On geology field trips, I assumed my concerns were primarily mine to manage. At first, I questioned whether geology was worth the effort. But the challenges of geographic and cognitive novelty slowly ebbed with time; I came to see how the science could empower me to pursue interesting questions. Moreover, certain peers and faculty helped decrease the social barriers. But the psychological novelty has been hardest to resolve. Indeed, this project has helped me to accept that that is no longer my goal. Now on field trips, I perceive both the constraints and the values of my disabilities in my career as a geologist.

Discovering Caves On Your Own: Utilizing Learning Modules Systems as a Tool to Increase Access to Educational Resources and Knowledge of Caves and Karst

- 10:20–10:35 A.M.
- Room 211
- Oral presentation
- **Authors**: Devra Willingham, Daniel Runyan, & Daniel Jones
- **Abstract**: In the United States, 40% of groundwater used for drinking comes from karst aquifers. However, the word "karst"--which refers to the landscapes that develop on soluble rock such as limestone or gypsum, and include caves, sinkholes, and sinking streams–is not commonly used or well understood in most of the United States. Access to cave and karst science and information outside of academia is reduced by paywalls, jargon, and the need for background content knowledge. People living on karst are faced with complex issues such as sinkhole formation, aquifer depletion and contamination that can be mitigated by knowledge and changes in land use. One of the major tenets of the National Cave and Karst Research Institute (NCKRI) is public education. NCKRI has

produced a new tool to help increase available educational resources by creating two learning modules: 1. Volcanic Caves and 2. Intro to Solution Caves. These modules require minimal previous knowledge, introduce and define all new jargon, and are peer reviewed to ensure accuracy. The learning modules include summaries, videos, interactive visual aids and intermittent assessments to provide a variety of learning needs. Each learning module has clear learning objectives and is designed to provide a foundational understanding that further lessons can build upon. The advantage of online learning module systems (LMS), such as Articulate, is the material can easily be chunked into “bite sized” informational pieces. The user can also go at their own pace while meeting their learning needs whether it's a quick review or utilizing additional recommended resources for a more indepth lesson. These learning modules can be utilized by professionals that work with caves to provide foundational knowledge, teachers who want to provide their students interactive geoscience lessons, or even cave enthusiasts who want to learn more. At the end of each learning module an assessment is given so users can identify misconceptions and gauge their understanding. These modules are part of a pilot program to facilitate feedback and assess user needs with the purpose of developing comprehensive and accessible karst education and training resources.

Dualities in Geology: Reckoning with Collecting and Access

- 10:40–10:55 A.M.
- Room 302A
- Oral presentation
- **Authors**: Lauren Neitzke Adamo & Carol McCarty
- **Abstract**: Founded in 1872, the Rutgers University Geology Museum (RUGM) is the oldest geology museum in the country. While achieving New Jersey’s land grant status solidified Rutgers’ role in the disciplinary movement to investigate the chemical and geological foundations of agriculture, it was the Museum collections that were central to education and public outreach. In the effort to amass those collections, practitioners aggressively obtained mineral, fossil, and cultural artifacts. These unethical collecting practices that were prevalent in the mid-19th century, often compounded by acts of historical erasure, were perpetuated through practices like salvage archaeology. Through community-based approaches and coordinated archival research efforts, the RUGM has moved to rectify these past injustices. This process has also revealed several previously unacknowledged individuals who belonged to various marginalized groups, including women, disabled individuals, and immigrants, who made invaluable contributions to the museum's development. Scientific, organizational, and artistic contributions from individuals such as William S.

Valliant, Alfred Poledo, and Anne Burgess had profound and lasting impacts on the museum's collections, research, and public engagement. These research efforts illustrate the contradictory history that underlies historic institutions such as the RUGM and acknowledges past harms as well as triumphs. While these institutions were built upon and benefited from the marginalization of many groups, this work revealed that they also served as a haven for minoritized individuals to pursue knowledge and thrive.

Tuesday, October 21

petro-image: A Web-based Platform for Open and Accessible Digital Microscopy

- 8:00 A.M.–5:30 P.M.
    - Presenter at poster from 9:00–11:00 A.M.
- Hall 1
- Poster presentation
    - Booth #27
- **Authors**: Glenn Sharman & Johnathan Sharman
- **Abstract**: Microscopy is a fundamental tool for teaching and research in the Earth sciences (e.g., thin section petrography, scanning electronic microscopy). Although the microscopic field of view is inherently limited, high-resolution images of entire specimens may be created by combining multiple individual photomicrographs into a seamless mosaic. Such digital images have many benefits, including the ability to view the entire specimen in a single view, share results with colleagues, and preserve a digital archive. Digital microscopy also provides opportunities for analysis that would be impossible or difficult with traditional microscopy. Unfortunately, there are significant barriers to widespread and open access to digital microscopy in the Earth science community, including challenges with 1) storing, sharing, and manipulating the very large file sizes typical of high-resolution images, 2) simultaneously working with multiple image files from the same specimen (e.g., paired plain and cross-polarized images of a thin section), and 3) downloading and installing the specialized software required for digital microscopy, some of which is proprietary in nature. This presentation introduces petro-image, an open-source, web-based platform that is designed to make digital microscopy widely accessible to the Earth Science community. petro-image uses the open-source OpenSeadragon JavaScript library and the tiled Deep Zoom file format to enable rapid exploration of thin section photomicrographs and other microscopic images, with only a computer or smart device and internet connection required. To date, there are more than 180

specimens hosted on petro-image, with the majority being petrographic thin sections of sediment or sedimentary rock. Although there are specialized microscopes designed for assembling digital images, this presentation will focus on images created using the PiAutoStage, a low-cost, 3D-printed automated stepping stage (Steiner and Rooney, 2021: Geochemistry, Geophysics, Geosystems). petro-image supports simultaneous display of up to four images, enabling easy visualization of different lighting configurations (e.g., plain-polarized, cross-polarized, and reflected light images). petro-image also includes basic functionality for common tasks, including measuring, annotating, gridding, and point counting, with potential to expand into more complex tasks such as image analysis. This presentation will include examples of how petro-image may be used for both teaching and research, with a focus on thin section petrography and zircon U-Pb geochronology.

From Classroom to Career: Making Geoscience Accessible to Later Adult Learners

- 8:00 A.M.–5:30 P.M.
    - Presenter at poster from 9:00–11:00 A.M.
- Hall 1
- Poster presentation
    - Booth #8
- **Authors**: Hannah Bahrami & Zachary Sickmann
- **Abstract**: Post-traditional learners make up over 60% of enrolled undergraduate students in the U.S. This influx of students is making it crucial for higher education to redevelop teaching methodologies to accommodate non-traditional students and offer support for these students in the geosciences. Later adult learners, adults over the age of 25, are typically a lower percentage of enrolled students in 4-year universities but are among the most motivated students to obtain their respective degrees. This group's involvement in the geosciences is crucial for the progression and diversity of the discipline. Job demand is projected to increase by about 5% within the next decade and potentially grow further as the baby boomer generation retires. However, we are seeing a decrease in the enrollment of geoscience students in university systems. Remodeling the relevancy of the geoscience discipline as a promising career path for later adult learners who are interested in the environment, energy, and community involvement, and discarding elements that can be off-putting or cause non-traditional student disengagement are some of the key pathways to increase the participation of these later adult learners. Rigid scheduling, intensive fieldwork requirements, and lack of diversity are among the top motives to not pursue a degree in geosciences, aside from financial burdens. However,

emphasizing realistic, obtainable career paths through a bachelor's degree and implementing more recognition of prior learning-type programs could be a pragmatic option for reducing a demanding course load. Strengthening and initiating more professional networks within underrepresented groups through educational networks, unions, and professional groups that showcase the success of these non-traditional students allows for the development of a diversified community bond. Additionally, skill sets that can be achieved at different stages in geoscience career paths, along with the financial burdens and gains encountered through completing a degree, have to be clearly articulated. Implementation to this capacity comes down to local departments and must be a continuous, large-scale effort within the geoscience community. Supporting the development of future geoscientists entails presenting realistic career pathways across all educational levels, addressing internal barriers within academia for later adult learners, and encouraging community establishment of underrepresented groups. By intentionally creating a more inclusive and flexible education model, the geoscience community can better engage non-traditional learners and everything they have to offer.

Wednesday, October 22

Bridging the Gap: Making Geological Field Research Accessible Through Film

- 8:00 A.M.–5:30 P.M.
    - Presenter at poster from 3:30–5:30 P.M.
- Hall 1
- Poster presentation
    - Booth #29
- **Authors**: Dushawn Johnson, Isabella Harnett, Matthew Crane, Miles Gaston, & Keith A. Brunstad
- **Abstract**: The general public often doesn't see how geological research funding is used or what it produces, as results can seem inaccessible or overly technical. This documentary aims to bridge that gap by showing the full process of field and lab work and explaining what the outcomes actually mean. It follows undergraduate field research, led by volcanologist Keith Brunstad, studying the Tieton Andesite lava flows of Bear Creek Mountain located in the South-Central WA Cascade Range. The flows, among the longest on Earth at 74 and 52 km, erupted from the Goat Rocks volcanic complex due to subduction of the Juan de Fuca Plate beneath the North American Plate. This film captures the full arc of the research, from setting up a remote field camp at Pinegrass Ridge to students

returning to SUNY Oneonta for lab analyses. Footage was shot using a Lumix GH5, Sony HandyCam HDR-CX405, DJI Air 3s 1 inch CMOS camera + 70mm medium tele camera, and iPhone 13. All footage was edited using the Premiere Pro Adobe editing software. The documentary is structured in three parts. The first introduces the student researchers through morning routines and interviews, highlighting their motivations and expectations. It also reveals the logistics of organizing a remote camping and research trip with limited access to water and supplies. The second section covers the core fieldwork, including hiking, sample collection and drone imaging. Additionally, it emphasizes the physical and practical demands of conducting a field investigation, like climbing steep cliffs and talus slopes to collect samples. The final segment returns to the lab, where students reflect on their experiences and analyze samples using a Hitachi 3030 SEM with Bruker EDX and Olympus BX51 polarized light microscope. Their data is compiled into reports and posters for presentation at the 2025 GSA conference in San Antonio. Understanding the rheology and emplacement of long andesitic flows helps predict the behavior of similar volcanic systems and supports future hazard assessment and mitigation. Overall, this documentary aims to show the public the value of funding scientific field research by demonstrating its real-world role in preventing disasters and protecting communities.

Disabled Voices: Stories of Accessibility at the Intersection of Disability and Identity

- 8:00 A.M.–5:30 P.M.
    - Presenter at poster from 3:30–5:30 P.M.
- Hall 1
- Poster presentation
    - Booth #31
- **Authors**: Kelly Best Lazar & Samantha W. Ridgway
- **Abstract**: Disabled students can experience a variety of accessibility outcomes when characteristics of their disabilities interact with identities of differing degrees of social privilege, potentially aiding them in navigating these spaces or compounding the difficulties they face in higher education spaces. The experiences of 39 students who identify as disabled and are majoring in a science discipline were investigated through a nationwide survey. Students were asked to describe the ways in which their social identities (1) afforded them privilege and/or (2) created an additional barrier in having their accessibility needs met. These written responses were open coded using MAXQDA and analyzed to understand code patterns and share the stories of these students. The three most common codes are those describing experiences associated with race, gender, and access to wealth. Students described race and gender as a

privilege or barrier that was situational, individual, and/or contextual, while access to wealth was always considered to be beneficial for meeting their accessibility needs (and lack of financial resources/support was a barrier to accessibility). Other common supports for accessibility include feeling like people listened to them or that they had the power to advocate for themselves, access to quality medical care, and mental health support. Common barriers to accessibility included feeling like they were not believed or taken seriously, tension with cultural norms/practices, lack of financial resources, and self-confidence or facing mental health challenges. The most common overlapping codes (six instances of co-coded responses) are for identifying as a woman/being female/femme-presenting and not being believed and/or taken seriously. We also highlight that while some experiences are highly associated with being a support or barrier (e.g., access to wealth is described as a support and lack of financial resources is described as a barrier), closely-held identities may not predictably explain how to meet a student's accessibility needs or whether a student's accessibility needs are being met. This supports the body of work in accessible practices that suggests that ensuring accessibility needs cannot be done in a one-size-fits-all approach; intersecting identities and life experiences necessitate individualized approaches for making science accessible to more students.

Accessibility and Survey of a Portion of the Sheltowee Trace Trail in Red River Gorge Geological Area, Kentucky

- 8:00 A.M.–5:30 P.M.
    - Presenter at poster from 3:30–5:30 P.M.
- Hall 1
- Poster presentation
    - Booth #32
- **Authors**: Mary Catherine Kelly, Kaiya Noelle Bensing, Phoebe Bathje, Maura Hart, & Mark P. S. Krekeler
- **Abstract**: Having sufficient infrastructure for persons with disabilities is a primary principle of the Americans with Disabilities Act. However, the broad impact of accessibility goes beyond those with disabilities and extends to all aspects of society. Positive economic impacts of creating accessible areas can be driven by accessible tourism as groups will choose vacation and recreation sites based on accessibility. The demand for accessible tourism areas will likely increase as the number of retirees increases. This research was conducted by obtaining quantitative and observational data over the course of roughly a half a mile of the Sheltowee Trace trail in Red RIver Gorge, a protected geological area in Kentucky. By measuring a total of 30 sites and measuring the degree of slope, width, approximate erosion depth, and observations of potential hazards, the

means of increasing accessibility can be researched. The quantitative data resulted in an average slope of about 2.3 degrees (Range 0 to 12.5), an average width of 58.4 inches (range 28 to 242, 7.7 inches of erosion by average (range 0 to 44), as well as an estimated 15-20% of the trail being affected by larger roots, terraced trail parts due to roots, treefall, and bedrock exposure. No overhanging vegetation obstructed the trail. Additionally, the results of the research lead to some possible solutions; leveling the path and implementing erosion control in order to make an appropriate slope for use of off-road wheelchairs, adding benches and shelters along the trail for resting, creating accessible overlooks along the trail using existing width and view that already exist on the trail, and providing paving. A volume of approximately 100 cubic yards of native derived packed sand and aggregate would be needed to fill and buffer existing erosion. Two locations would be ideal for poured concrete and rigid shelters. Implementation of many of these solutions would require approximately $40,000 using extensive volunteer labor. Funding from either a private or federal group, as well as park interest and collaboration, would be required for implementation. This investigation builds on previous work and collectively demonstrates the need for limited infrastructure development for the Red River Gorge Area.

Assessing Common Accessibility Issues in Parks of the Southwest United States: Key Findings and Scoping for Future Detailed Studies

- 8:00 A.M.–5:30 P.M.
    - Presenter at poster from 3:30–5:30 P.M.
- Hall 1
- Poster presentation
    - Booth #33
- **Authors**: Mary Catherine Kelly & Mark P. S. Krekeler
- **Abstract**: Parks in the Southwestern U.S. are a major tourism draw both domestically and internationally. These parks are unique in that there are critical safety concerns that exist, large numbers of tourists use the park, and the land needs to be protected from impact. Demand for national parks is generally increasing and with an increase in retiring populations, accessibility is an issue to be addressed. Initial observational research was conducted in Death Valley National Park as well as other areas surrounding it encompassing Valley of Fire, Zion Park and commercial areas. The goal of this research was to generally identify key issues and develop a survey approach to better inform efforts to increase accessibility. There were numerous general examples of accessible facilities and infrastructures such as paved trails, appropriate signage, accessible restrooms and retail sites in all three parks visited. However there were some major issues observed including little to no pavement in some popular tourist

areas that may limit wheelchair access, limited accessible restrooms, and inaccessible utilities and commercial spaces. Some improvements would include paving the relatively flat areas in some settings. Heat stress is noted as a safety issues for people with disabilities. Heat related issues pose a specific challenge and likely would require special engineering of structures, particularly in Death Valley. Of the three parks, Zion was generally assessed to have the best accessibility infrastructure with many accessible restrooms and ramps on many commercial sites in the park. Results of this effort provide structure for detailed surveys and scoping of future studies that would be needed to further develop accessibility infrastructure. Death Valley should be prioritized but likely improvements would be at higher costs. Valley of Fire would likely benefit the most from paving and simple shelter construction and would likely see the best cost-benefit, having several small fixes. By better establishing the context of disability infrastructure improvements, directions for companies and governments can be established to better allocate resources for maximizing use for the broader population. Some tasks could be completed via volunteerism however some tasks would require significant investment and technical design.