

Report:

Near-Surface Geophysics Community Input Workshop

August 25–26, 2026 | DoubleTree by Hilton, Albuquerque, New Mexico

Convened by the U.S. NSF [National Geophysical Facility](#) (NGF, operated by EarthScope Consortium) in partnership with the [Center for Transformative Environmental Monitoring Programs](#) (CTEMPs), [OpenTopography](#), [Natural Hazards Engineering Research Infrastructure](#) (NHERI), [Consortium of Universities for the Advancement of Hydrologic Science](#) (CUAHSI), and the [AGU Near-Surface Geophysics Section](#)

Statement of Purpose/Principles

The founding members of a partnership for near-surface scientific infrastructure (NSF NGF, CUAHSI, NSF CTEmps, NSF NHERI, and OpenTopography), along with representatives of the AGU Near-Surface Geophysics Section, convened a community workshop to:

1. Bring together a broad cross-section of the near-surface geophysics community to strengthen relationships, develop new collaborations, and build on prior community input (e.g., Hanson et al., 2022).
2. Assess gaps, overlaps, and coordination opportunities among the research and education community, NSF NGF, and the near-surface geophysics partner organizations to improve alignment, reduce duplication, and enhance collective impact.
3. Produce a Workshop Report with a community-informed set of prioritized capabilities to guide a partnership of facilities related to near-surface geophysics capabilities, investments, and activities for research and education.

Table of Contents

1. Executive Summary
2. Introduction and Motivation
3. Workshop Design and Participation
4. Findings: Gaps, Overlaps, and Coordination Opportunities
5. Community-Identified Solutions and Priorities
6. Prioritized Capabilities and Recommendations
7. Implementation and Next Steps
8. Conclusion
9. Appendices

1. Executive Summary

The near-surface geophysics community needs the instruments, software, data, and expertise that already exist across its facilities to be findable, shareable, and usable by people who are not specialists. Participants at this workshop ranked coordination ahead of acquisition. The first steps are a governance structure for the partnership, a single place where the community can see what the partners collectively offer, and an accounting of the gaps that remain and what closing them would cost.

The workshop brought more than 90 researchers, educators, and practitioners to Albuquerque on August 25 and 26, 2026, convened by the U.S. NSF National Geophysical Facility with five partner organizations: CTEMPS, OpenTopography, NHERI, CUAHSI, and the AGU Near-Surface Geophysics Section. Four thematic tracks (hardware and instrumentation, data processing and analysis, cyberinfrastructure, and organizational innovations) each met twice, first to diagnose gaps and then to propose solutions, and participants prioritized the resulting proposals by vote. The workshop built on a 2022 community process (Hanson et al., 2022) and on a community survey completed in February 2026 that drew 325 responses.

Five findings recurred across all four tracks. People cannot find instruments, software, data, or expertise that already exist. Data standardization and AI-readiness are a shared prerequisite rather than a cyberinfrastructure concern alone. Training is the highest-demand capability in both the survey and every breakout, and the community that needs it is not one audience: more survey respondents named teaching as an intended use than NSF-funded research. Institutions already hold purchased equipment that sits under-used. And current metrics and reporting requirements discourage these organizations from partnering with one another.

Participants identified nine actions and sorted them by time horizon. The near-term priorities, in order of votes, are a virtual center for near-surface geophysics; jointly convened workshops and events; a single access point for instrumentation, with a structure for sharing it; targeted investment in instrumentation that individual researchers and teachers cannot otherwise reach; and a common repository for software and documentation. The longer-term priorities are curated, benchmarked datasets with workflows and worked examples, which drew more votes than any other action; AI and machine-learning tools for data translation and discovery; a portfolio of affordable, modular training; and a mechanism for matching expertise across disciplines.

Many of the outcomes restate what the community said in 2022, which is itself a finding: four years on, the need persists. Three things are new. AI-readiness, analysis-ready data and uniform metadata are necessary. The proposed coordinating body is a virtual center operated within an existing facility rather than a new institution. And participants recognized how much capability has already been bought and is sitting idle.

2. Introduction and Motivation

2.1 Near-surface geophysics as a convergent, cross-disciplinary capability

The near-surface geophysics (NSG) community approaches a wide variety of problems often spanning approximately the top 100 m of the subsurface, surface processes, interaction of these with the atmosphere, biosphere, cryosphere, oceans, and the built environment. NSG studies typically require multimodal geophysical data sets analyzed by multi-disciplinary teams of scientists and engineers. While NSG has historically evolved with facilities and organizations that serve subsets of the overall community focused on particular methods or applications, many shared needs exist across these smaller communities. This workshop sought to identify opportunities to maximize the value of existing resources by sharing across organizations, and common objectives to work toward in service of the broad science and engineering communities that use and contribute to NSG.

2.2 Prior community input this workshop builds on

Effort	Date	Scale	Key output
AGU/NSF near-surface geophysics community engagement (survey plus three virtual workshops)	2022	769 survey responses; 177 workshop participants; 12-member steering committee	13 representative science priorities; eight integrated opportunities (Hanson et al., 2022; NSF award EAR-2139353)
Envisioning a Near-Surface Geophysics Center for Convergent Science (Eos science update)	Apr 2023	—	Public articulation of the center concept and its eight opportunity areas
NGF Near-Surface Geophysics Community Input Survey	Dec 12, 2025 – Feb 12, 2026	325 responses (231 U.S.-based)	Method, support-type, and audience demand signal (see Appendix C)
This workshop	Aug 25–26, 2026	94 attendees	This report

3. Workshop Design and Participation

3.1 Format

Two-day, in-person workshop at DoubleTree by Hilton, Albuquerque, New Mexico. All accepted attendees were eligible for travel support (hotel accommodation and airfare). Eligibility was limited to U.S. citizens, U.S. residents, or those affiliated with U.S.-based institutions. Attendance was determined by application, with a June 22 application deadline.

The agenda alternated plenary framing with four parallel thematic breakout tracks, each run twice. Day 1 focused on assessing gaps, overlaps, coordination opportunities, and training needs, and Day 2 focused on identifying solutions and priorities. The full meeting agenda is in Appendix A.

Breakout Tracks	Day 1 focus	Day 2 focus
Hardware and instrumentation	Gaps, overlaps, coordination opportunities	Solutions and priorities
Organizational innovations supporting collaboration and interdisciplinarity		
Data processing and analysis		
Cyberinfrastructure		

3.2 Participant summary

Category	Confirmed
Community participants	69
Speakers, session leaders, and invitees	12
EarthScope staff	13
Total	94

Travel support: 55 participants received full travel support; 14 attended with reduced or no travel support (federal, local, or otherwise self-funded). Full list of participants is in Appendix B.

4. Findings: Gaps, Overlaps, and Coordination Opportunities

Day 1 breakouts diagnosed the current state using a *Needs / Haves / Better-Togethers* framing. Workshop participants self-selected one of the four breakout tracks (Hardware and instrumentation, Organizational innovations supporting collaboration and interdisciplinarity, Data processing and analysis, Cyberinfrastructure). Sessions were led by a facilitator with support from a dedicated note-taker. The following were presented as report-outs to the rest of the workshop.

4.1 Hardware and instrumentation

- **Direction:** hardware investment needs to be driven by current *and future* science and education needs.
- **Need — novel instrumentation** with new form factors and capabilities: radar, marine sensors, low-weight nodal systems, portable and low-power ERT, wireless systems, gravity, EM. Two capability drivers called out specifically: enabling sustained *monitoring*, and enabling *rapid response* (e.g., post-fire).
- **Need — ARCO (analysis-ready, cloud-optimized) data**, which requires a robust model for uniform data and metadata across heterogeneous near-surface sensors; identified as a prerequisite for AI use.
- **Need / Have / Better-together — training opportunities** for students, faculty, and other users.
- **Need / Have / Better-together — a "one-stop shop"** for resource sharing: equipment access, data availability, opportunities; a library (or library of libraries) that gets users to what they want quickly, possibly via a natural-language interface.

4.2 Data processing and analysis

- **Standardization:** data formats (sensor, archive, processing), metadata including data quality and accuracy, and data representation and visualization.
- **Benchmark datasets:** standards-compliant, accessible, with robust metadata and documented data quality.
- **Data access:** enabling reuse and integration, lowering barriers to participation.
- **Software:** access to open-source software; software improvement and maintenance; access to compute.
- **Lowering barriers to participation:** knowledge base, reference workflows, training, equipment access, open data.
- **Interdisciplinary collaboration:** a community with the will but without a platform for exchanging efforts and building teams; incentives; broader outreach about research efforts, new data, collaboration opportunities, and science impact.

4.3 Cyberinfrastructure

- **Needs:** finding relevant information at the appropriate scale and with appropriate disciplinary context; running adequately resourced models and analyses; collaborating across the research lifecycle.
- **Have:** DOIs, open-source languages, cloud, compute, some shared standards, expertise. Storage and computing are now commodities.
- **Better-togethers:** tool and solution discovery within and across partner systems; user interfaces and AI agent interfaces; cross-discipline training and cyberinfrastructure design that builds solutions which resonate rather than alienate; joint advocacy to change incentive structures — current metrics and reporting keep organizations walled in and discourage partnering on cyberinfrastructure.

4.4 Organizational innovations

- **Needs:** centralized or federated repositories that make multidisciplinary investments broadly discoverable, and ways to help people know where to look for what they need; marketing and outreach that highlights capabilities through real-world use cases, raising impact for stakeholders, students, funders, and researchers.
- **Have:** deep disciplinary expertise across a large number of fields; strong value propositions — near-surface capabilities matter to basic research, technology transfer, economic development, national security, and natural hazard resilience.
- **Better-togethers:** co-convened workshops, short courses, and webinars that leverage existing event and content investments into broader capacity building; matchmaking for partnerships, from student exchanges to collaborative experimental teams to sabbatical exchanges (teams can know what a single investigator cannot).

4.5 Cross-cutting themes

Threads visible across all four breakout tracks: (a) discovery — people cannot find instruments, software, data, or expertise that already exist; (b) standardization and AI-readiness are shared prerequisites rather than cyberinfrastructure-only concerns; (c) training is the highest-demand capability in both the community survey and every breakout; (d) incentive and reporting structures are actively obstructing cross-facility partnership; and (e) institutions already hold purchased equipment that is under-utilized.

5. Community-Identified Solutions and Priorities

Day 2 breakouts converted Day 1 diagnoses into candidate actions, which were then aggregated and prioritized in a final plenary session. The following were presented as reports to the rest of the workshop.

5.1 Hardware and instrumentation

- A large language model (LLM) trained on technical resources from the collaborating organizations, usable as a training interface accessible to many levels of user — noted as easily achievable within a year.
- A lessons-learned forum, database, and webinar series: submitted by PIs, hosted by one of the collaborating organizations, formatted into case studies.
- A registry of available equipment at universities for peer-to-peer borrowing, acknowledging unresolved liability and university policy issues.
- "Near-Surface Workshop On the Road": regional, university-hosted events organized by the collaborating organizations.
- Investment in big-ticket new and existing hardware not otherwise accessible to individual researchers, PIs, or teachers.
- Additional mechanisms for ongoing community input on hardware needs.

5.2 Data processing and analysis

- Create a common repository or framework for federation of software and documentation, originating in any user community.
- Use metadata and geolocation tags to organize datasets for spatial search.
- Support multiple data formats (raw and intermediate) in archives; maximize discoverability and accessibility of all holdings.
- Build a portfolio of affordable, multi-modal training programs.
- Make training modular — stand-alone and à la carte, so users can learn exactly what they need.

5.3 Cyberinfrastructure

- Generate cross-discipline benchmarking datasets and workflows to support success metrics for formats and standardization, and for AI-enabled data discovery tools.
- Run an intensive (about one month) cross-disciplinary, domain-focused (e.g., geohazards) workshop or training course to co-generate benchmark datasets and build consensus on data standardization and AI-readiness needs.
- Field a community survey focused specifically on data formats and AI-readiness needs, distributed through all partners.
- Develop AI and LLM tools — with uncertainty, provenance, and logic — that make it easier to prepare data in standard or translatable formats and to discover data across disciplinary cyberinfrastructure.

5.4 Organizational innovations

- **Virtual Center model** ("Virtual Center on NSG"): operated by NGF, with a leadership structure representing the near-surface geophysics community, serving as a hub for community activities.
- **Community equipment sharing**: maximize the impact of instruments already at institutions that may be under-utilized or unwanted; the CTEMPs federated DAS model as one precedent, recognizing different models suit different technologies.
- **Curated, benchmarked datasets**: community evaluation of data types for different purposes, starting with a limited set, to identify which data are most valuable and inform a data hub concept.
- **Matchmaking** between technology and disciplinary experts to tackle near-surface geophysics science.
- **Training and workforce development**: videos, simplified terminology, and workflows targeted at data and technology *users* rather than experts.
- **Communications**: focused messages where near-surface geophysics touches the public interest — water availability, landslide hazard mapping — with datasets built around them. Open question raised: whether science advocacy is more appropriately led by professional societies.
- **Themed, multidisciplinary joint workshops** convened across organizations, community-oriented, covering the breadth of near-surface geophysics methods and data processing — not necessarily under a center.

5.5 Cross-cutting themes

Across the breakout groups, several core cross-cutting themes emerged. The breakouts approached these themes from different starting points, but repeatedly returned to shared access, usable data, and ways for collaborating organizations to act together.

<i>Theme</i>	<i>How it was expressed across the breakout groups</i>
Share access to resources	Equipment investment and lending; repositories for software and data; a possible data hub; and a virtual center that helps people find and use these resources.
Discoverable, interoperable data	Metadata, geolocation, multiple archived formats, common workflows, and standards that let data move across disciplines and cyberinfrastructure.
Training designed for users	Regional workshops, webinars, case studies, modular courses, videos, and AI-assisted interfaces that help people use instruments, software, and data without first becoming specialists.
Community-defined priorities	Ongoing input on hardware needs, surveys on data formats and AI readiness, and community selection and evaluation of benchmark datasets.
Cross-disciplinary collaboration	Joint workshops, matchmaking between technology and disciplinary experts, and benchmark datasets built around shared science problems.
Coordination	A virtual center, jointly organized activities, and shared stewardship of

across organizations	equipment, training, and data all point to a need for clear roles and sustained coordination.
----------------------	---

Across the four breakouts, participants emphasized coordinated access to instruments, data, software, and expertise; practical training that meets users at different levels; and community-led development of interoperable data and trustworthy AI tools. They also called for sustained mechanisms to set priorities and connect organizations and disciplines around shared science challenges.

Two connecting mechanisms appear to be especially useful for the identified priorities:

- curated benchmark datasets that could tie together data standards, AI tools, training, and compelling science applications; and
- themed workshops that could bring together the people needed to develop those datasets and identify the next priorities.

6. Prioritized Capabilities and Recommendations

Among the solutions proposed through the breakout group process, nine priorities were identified. Participants were asked to vote on whether goals were near-term or far-term, then to vote for their two highest priorities within each group. As illustrated in Figure 1a, among the near-term goals, the total number of votes from highest to lowest was:

1. Create a virtual center
2. Conduct joint workshops, meetings, and other events.
3. Create a single shared access point for instrumentation (and a structure for sharing). This should include lists of what's available, how to get it, and how to get help.
4. Invest resources in otherwise inaccessible instrumentation.
5. Create a common repository for software and documentation (originating from any user community).

Among the far-term goals (Figure 1b), the total number of votes from highest to lowest was:

1. Provide multidisciplinary, curated, benchmarked data, workflows, and best practices with worked examples.
2. Develop AI/ML/LLM tools for data translation, discoverability, and accessibility.
3. Build a portfolio of affordable, multi-modal training programs.
4. Create a mechanism for matchmaking and networking for interdisciplinary collaboration

Note that among far-term goals, only multidisciplinary benchmarked data, workflows, and best practices stood out as having substantially more votes than other priorities.

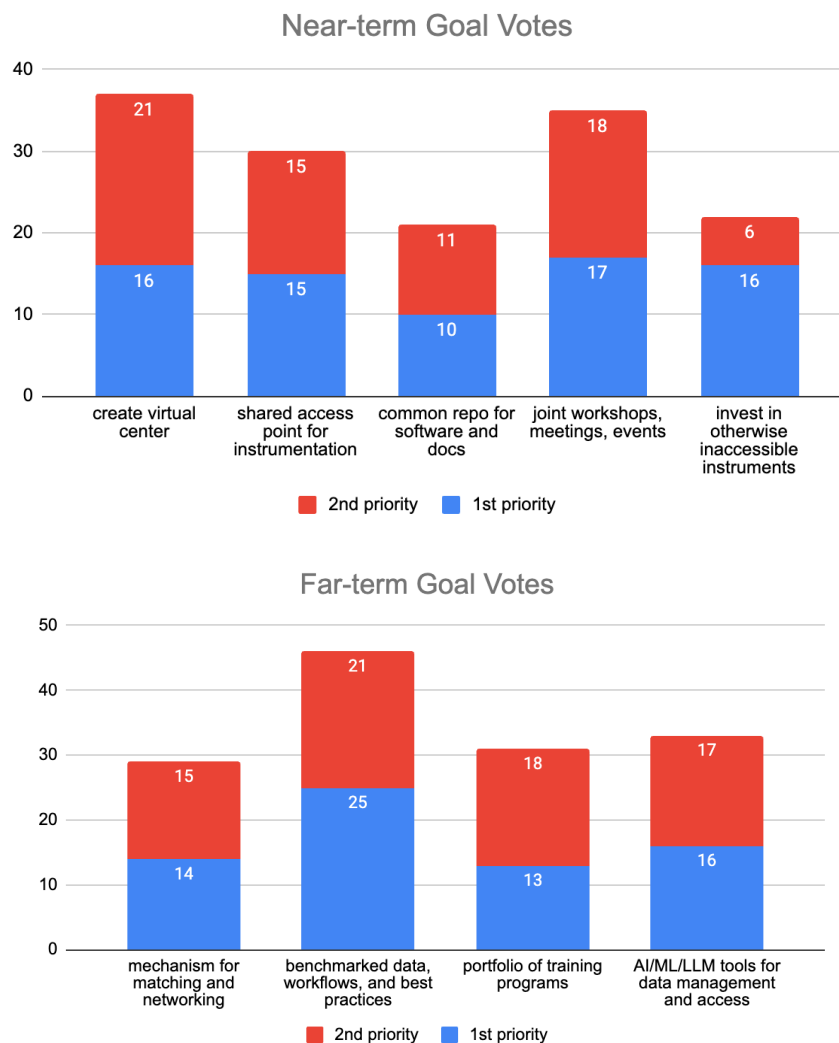


Figure 1a&b. Votes on prioritization of (a.- top) near-term and (b.- bottom) far-term goals.

6.1 Near-term actions (0–12 months)

- Create and implement a governance structure for the partnership and virtual center
- Create a landing page for:
 - Combined list of available instrumentation and access points
 - Repository for software and documentation
 - Access points to currently available training, communications, educational programs and other outreach mechanisms
- Determine gaps in available resources and identify possible funding mechanisms

6.2 Mid-term actions (1–3 years)

- Plan and hold next community event: workshop or symposium
- Submit joint proposals for community resources (instrumentation, large equipment)
- Develop AI/ML/LLM tools for data translation, discoverability, and accessibility

- Build a portfolio of new affordable, multi-modal training programs based on the combined expertise of the partnership.
- Create a mechanism for matchmaking and networking for interdisciplinary collaboration

6.3 Longer-term and aspirational

- Provide multidisciplinary, curated, benchmarked data, workflows, and best practices with worked examples.

7. Implementation and Next Steps

1. Synthesize workshop input.
2. Combine with other information: past reports, surveys, and workshops.
3. Generate strategies for action.
4. Share priorities and strategies.
5. Advocate for collaboration.

8. Conclusion

Over two days in Albuquerque, a cross-section of the near-surface geophysics community set out what the field needs from a coordinated set of facilities. Much of what emerged reaffirms priorities the community articulated in 2022 (Hanson et al., 2022): shared access to instruments, training that reaches users at many levels, open-source software, and data that can be found and reused across disciplines. The recurrence of these priorities confirms that four years later, much of the underlying need persists.

Three elements of this workshop's priorities were not part of the 2022 picture. The first is AI-readiness as a constraint on everything else. Participants treated analysis-ready, cloud-optimized data and uniform metadata not as ends in themselves but as the precondition for the AI and machine-learning tools that appear among the prioritized actions. The second is a change in what coordination should look like. The 2022 process envisioned a center; the highest near-term priority here is a virtual center operated within an existing facility, with a leadership structure drawn from the community. That is a federation of existing facilities rather than a new institution. The third is the recognition that a substantial amount of capability has already been purchased and is sitting idle: instruments under-used at institutions, and software and training that exist but cannot be found. Several of the highest-ranked actions are accordingly about discovery, registries, and sharing structures rather than acquisition.

One mechanism recurred across all four breakouts and would serve several priorities at once: curated, benchmarked datasets built around shared science problems. A collection of this kind would give data standards something concrete to be tested against, supply the reference material that AI and machine-learning tools require, provide worked examples for teaching, and demonstrate the value of near-surface methods to audiences outside the field. It drew more

votes than any other far-term priority, and it is the point at which the partner organizations' separate holdings become more useful together than apart. The near-term actions identified in this report are its prerequisites: a governance structure for the partnership, a single place to find what the partners collectively offer, and an accounting of what is missing and what closing those gaps would require.

9. Appendices

Appendix A — Full workshop agenda

Day 1, Tuesday, Aug 25, 2026

Time	Session
8:30	Welcome, logistics, goals and intended outcomes: Rebecca Bendick (EarthScope)
8:40	Comments from NSF program officers: Leonard Spinu (in person), Giovanna Biscontin (remote)
8:55	Setting the Stage: summary of prior efforts: Sarah Kruse, Xavier Comas
9:20	Panel: current near-surface geophysics activities of partner organizations: R. Bendick (EarthScope/NGF), J. Browning (NHERI), J. Read (CUAHSI), C. Crosby (OpenTopography), A. Harpold (CTEMPs)
10:00	Break
10:30	Plenary: disciplinary views of near-surface geophysics techniques (chair: Roelof Versteeg) a. <u>Qifei Niu</u>: hydrogeophysics <i>Revealing Hydrologic Processes in the Critical Zone with Near-surface Geophysics</i> b. <u>Seth Campbell</u>: cryospheric applications <i>Current and Future Cryosphere Geophysics on the Juneau Icefield</i> c. <u>Karina Vielma</u>: educational applications <i>Designing Experiences for the Next Generation of Natural Hazards Scientists and Engineers</i> d. <u>Marin Clark</u>: CLaSH and hazard applications <i>From the Ground Up: Integrating Near-Surface Geophysics into Land Surface Hazard Research</i> e. <u>Xavier Comas</u>: Hydrogeophysics / Biogeophysics / Critical Zone

Time	Session
	<i>Transforming subsurface imaging through innovative near-surface geophysics: multiscale approaches in hydrogeophysics, biogeophysics, and critical zone science</i>
12:00	Lunch
1:30	Breakout session 1: assessing gaps, overlaps, coordination opportunities, and training needs Primary prompts: Assess gaps, overlaps, and coordination opportunities among the research and education community, NSF NGF, and the near-surface geophysics partner organizations to improve alignment, reduce duplication, and enhance collective impact. 1. Hardware/instrumentation 2. Organizational innovations that support collaboration and interdisciplinarity 3. Data processing and analysis 4. Cyberinfrastructure
3:00	Break
3:30	Plenary: emerging technologies and applications (chair: JoAnn Browning) a. <u>Tasha Snow</u>: big data (recorded video) <i>People, platforms and petabytes: Designing our science for 4,000 users instead of 40</i> b. <u>Matt DeJong</u> <i>High-fidelity regional simulations: hazard modeling, high-resolution inventories, and infrastructure impacts</i> c. <u>Krishna Kumar</u> (applied cases; technology transfer to commercial sector) <i>AI-ready Geophysics: Data Curation to Scientific Machine Learning</i> d. <u>Eileen Martin</u> <i>Overview of recent advances in DAS as a near-surface geophysics method</i>
4:50	Breakout report-outs (chair: Jordan Read)
5:30	Adjourn

Day 2, Wednesday, Aug 26, 2026

Time	Session
8:30	Recap and plan for the day
8:45	Breakout session 2: identifying solutions and priorities Primary prompts: Specific solutions and actions that address gaps and opportunities identified on day 1 1. Hardware/instrumentation 2. Organizational innovations that support collaboration and interdisciplinarity 3. Data processing and analysis 4. Cyberinfrastructure
10:15	Break
10:45	Wrap-up: report-outs, synthesis of interdisciplinary science priorities and required infrastructure, overarching themes, report plan, closing remarks (chair: JoAnn Browning)
12:00	Adjourn

Appendix B — Participants

Ramadan Abdelrehim, ANS Engineering
 Henry Agbogun, Fort Hays State University
 Md Iftekhar Alam, California State Polytechnic University at Pomona
 Casey Albritton, Florida Geological Survey
 Tadesse Alemu, University of Wisconsin-Eau Claire
 Mohamad Alipour, University of Illinois Urbana-Champaign
 Luciana Astiz, NSF
 Yusuf Azeez, Texas A&M University
 Rebecca Bendick, EarthScope
 John Bradford, Colorado School of Mines
 Abdullah Braik, Texas A&M University / Old Dominion University
 Jochen Braunmiller, University of South Florida
 JoAnn Browning, UTSA/NHERI
 DJ Bustos, EarthScope
 Seth Campbell, University of Maine
 Michael Cardiff, University of Wisconsin-Madison
 Seth Carpenter, University of Kentucky / Kentucky Geological Survey
 Joshua Caster, US Geological Survey, Grand Canyon Monitoring and Research Center
 Donna Charlevoix, EarthScope

Hang Chen, University of Iowa
Marin Clark, University of Michigan
Xavier Comas, Florida International University
Sean Connell, New Mexico Tech / New Mexico Bureau of Geology
Leah Courtland, University of Indianapolis
Christopher Crosby, EarthScope
Subhankar Das, University of Idaho
Matt Dawson, EarthScope
Matt DeJong, UC Berkeley
Christine Downs, Sandia National Laboratories
Luel Emishaw, Midwestern State University
Alomir Favero, Bucknell University
Rebecca Ghent, Planetary Science Institute
Francisco Gomez, University of Kansas
Navid Goudarzi, Cleveland State University
Dewan Mohammad Enamul Haque, Louisiana State University
Adrian Harpold, University of Nevada, Reno
Md Mohimanul Islam, University of Kentucky / Kentucky Geological Survey
Md Sahidul Islam, University of Memphis
Harry Jol, University of Wisconsin-Eau Claire
Galen Kaip, EarthScope
Marianne Karplus, University of Texas at El Paso
Md Kibria, Morehead State University
Christopher Kratt, University of Nevada, Reno
Krishna Kumar, UT Austin
Love Kumar, The Everglades Foundation
Haipeng Li, Stanford University
Daan Liang, University of Alabama
Anuradha Mahanama, Rust College
Eileen Martin, Colorado School of Mines
Julia Masterman, CUAHSI
Glen Mattioli, EarthScope
Jeremy Maurer, Missouri S&T
Micaela Mercuri, University of New Mexico
Roger Michaelides, Washington University in St. Louis
Pnina Miller, EarthScope
Morgan Moschetti, US Geological Survey
Akram Mostafanejad, EarthScope
Kisa Mwakanyamale Gilkie, Illinois State Geological Survey - University of Illinois Urbana-Champaign
Bassam Nasir, University of Central Florida
Qifei Niu, Boise State University
Masoud Nobahar, Earth Mechanics, Inc.
Maciej Noras, University of North Carolina at Charlotte

Daniel Ortiz-Diaz, Geoview Associates Inc / University of South Florida
 Jeeban Panthi, Kansas State University
 Sophia Parafina, EarthScope
 Flavia-Ioana Patrascu, Louisiana State University
 Beth Pratt-Sitaula, EarthScope
 Ashwani Raju, Pennsylvania State University
 Yuly Paola Rave Bonilla, University of South Florida
 Jordan Read, CUAHSI
 Widodo Samyono, Jarvis Christian University
 Loring Schaible, Sandia National Laboratories
 Kristin Schild, University of Maine
 Logan Schmidt, Edwards Aquifer Authority
 Alissa Scire, EarthScope
 Elnaz Seylabi, University of Nevada, Reno
 Mohammad Afzal Shadab, Princeton University
 Rashid Shams, University of Southern California
 Matthew Sirianni, East Carolina University
 Leonard Spinu, NSF
 Rocky Talchabhadel, Jackson State University
 Aleksei Titov, Fervo Energy
 Anna Titova, Bureau of Economic Geology, The University of Texas at Austin
 Joseph Vantassel, Virginia Polytechnic Institute and State University
 Roelof Versteeg, Subsurface Insights
 Karina Vielma, The University of Texas at San Antonio
 Lei Wang, University of Cincinnati
 Jia Wang-Connelly, Seismic Safety Commission, California Governor's Office of Emergency Services
 Joseph Wartman, University of Washington, RAPID Facility
 Alex Watanabe, University of Idaho
 Melissa Weber, EarthScope
 Chester Weiss, Sandia National Laboratories / University of New Mexico
 Xiaotao Yang, Purdue University
 Subbarao Yelisetti, Texas A&M University-Kingsville

Appendix C — Results from NSG Community Input Survey, Dec 12, 2025 – Feb 12, 2026

325 responses, 231 U.S.-based; U.S. responses reported here.

- **Ground-based methods most likely to be used** if available from NGF or partners: GNSS and GPR led, followed by active seismic, geodetic imaging (lidar, SfM), passive seismic, ERT, and EM.

- **Aerial (UAS) methods most likely to be used:** lidar led, followed by GPR, multispectral, EM, and other imaging.
- **Types of support most likely to be used:** instrument and software quick guides led, followed by online tutorials/videos and instrument loans.
- **Intended use:** 69% other research (NASA, DOE, university-sponsored), 62% teaching, 55% NSF-funded research.
- **Respondents:** 74% college/university, 10% state/federal government, 7% industry; 48% faculty, 21% researchers, 13% graduate students, 4% postdocs. Mean self-reported near-surface geophysics knowledge 3.9 on a 5-point scale. Strongest sub-discipline representation: hydrogeology/hydrology, near-surface geophysics, environmental science, geohazards, engineering, seismology.

Appendix D — Post-NSG Workshop Survey Results

Summary of conclusions from 2026 Near-surface Geophysics Community Input Workshop
~40% response rate — 37 responses out of 94 participants (81 non-EarthScope staff participants)

- A. Overall people were satisfied with average of 8.5 out of 10 (none lower than 7)
- B. Plenary sessions were mostly ranked as "Good"
- C. Breakout sessions were ranked "Good" to "Excellent"
- D. Respondents' goals for attending largely matched the goals of the workshop (network, learn about NSF-funded near-surface geophysics activities; give input)
- E. Respondents "agreed" to "strongly agreed" that the workshop accomplished community development and future endeavor planning
- F. Respondents said pre-workshop communications were largely "excellent"
Workshop structure was "good" to "excellent"
Location and hotel were "average" to "good"
- G. Workshop survey respondents had somewhat different priorities for instrumentation than the early 2026 community survey responses. In particular ground-based GNSS and geodetic imaging were less valued, while ERT and DAS ranked highest. Aerial method priorities were less different with lidar and GPR still ranked highest and minor differences in other priorities. Conclusion: Different populations of NSG users show somewhat different priorities for near-surface instruments/methods
- H. Further input on near-surface geophysics support did not raise any substantively different topics than the workshop itself, but particular respondents did elaborate on or emphasize particular ideas.
The most mentioned topics were related to:
 - continued community development/communications ideas
 - request for greater clarity on the host organization's activities related to NSG
 - training suggestions
 - specific instrument suggestions

Some suggestions for future workshop format/content were also given that would be good to consider if there are future events.

Appendix E — References

Hanson, R. B., Kruse, S., Comas, X., Doro, K. O., Holmes, T., Knight, R., Lyon, L., McDaris, J., Minsley, B., Morris, I., Rodriguez Tribaldos, V., Slater, L., Tsai, V., & Zhang, C. (2022). Defining research and teaching priorities that could be advanced through a near-surface geophysics center [Preprint]. Earth and Space Science Open Archive.

<https://doi.org/10.1002/essoar.10512087.1>

Comas, X., Kruse, S., Grant, G., Hanson, B., & Lyon, L. (2023). Envisioning a near-surface geophysics center for convergent science. Eos, 104. <https://doi.org/10.1029/2023EO230139>

Robertson, I., Bobet, A., Edge, B., Holmes, W., Johnson, D., LaChance, M., & Ramirez, J. (2023). NHERI Science Plan: Multi-Hazard Research to Make a More Resilient World (3rd ed.). Natural Hazards Engineering Research Infrastructure Network Coordination Office.

<https://doi.org/10.17603/ds2-abbs-0966>

Acknowledgments

This workshop was supported by the U.S. National Science Foundation through award NSF-2435260 (National Geophysical Facility), and co-supporting awards to CTEMPs (NSF-2243961, 2243964, 2243962 and 2243963), OpenTopography (NSF-2410799, NSF-2410800, and NSF-2410801), NHERI (NSF-2129782, 2022469, 2131111, 2130997, 2037914, 2037883, 2037771, 2037900, 2037725, 2037899, 2227407, and 1841338), CUAHSI (NSF-2535162), and AGU. The convening organizations thank the 94 participants who contributed their time, the session chairs and note-takers, and NSF program officers Luciana Astiz, Giovanna Biscontin, and Leonard Spinu for their participation.

Any opinions, findings, and conclusions or recommendations expressed in this material are those of the workshop participants and do not necessarily reflect the views of the National Science Foundation.