

NHERI GSC

Graduate Student Council



2024 ANNUAL REPORT





OUR MISSION

To function as a centralized hub to provide the opportunity for students to develop leadership and interpersonal skills, practical experience, and exposure within the natural hazards research fields.





HOW WE SUPPORT GRADUATE STUDENTS

- ◆ **Build** a diverse graduate community for natural hazard researchers.
- ◆ **Connect** students with diverse mentors in the natural hazards' community.
- ◆ **Provide** support for students to attend natural hazards, research, and career workshops.
- ◆ **Encourage** diversity, equity, and inclusion (DEI) conversations.
- ◆ **Facilitate learning** about the impact of research on natural hazards practice.
- ◆ **Coordinate** leadership, service, and funding opportunities.



THE HISTORY OF NHERI GSC

The NHERI Graduate Student Council (NHERI GSC) emerged in October 2021 under the support of the National Hazards Engineering Research Infrastructure Network Coordinating Office's (NHERI NCO) Education and Community Outreach (ECO) Committee.

NHERI GSC was established with the primary objective of fostering a sense of community and collaboration among graduate students engaged in the field of natural hazard research.





The NHERI GSC is governed by an elected Executive Committee, consisting of a President, Vice-President, Secretary, Vice-Secretary, Treasurer, and Vice-Treasurer. Additionally, the organization has several (6) Standing Committees each comprised of a Chair and Vice-Chair, who work collaboratively with the Executive Committee, to oversee various critical areas of focus. NHERI GSC's Standing Committees including Membership; Workshops & Mentoring; Diversity, Equity & Inclusion; Research; Networking & Community Building; and Technology & Communication. Additionally, the NHERI GSC appoints a User Forum Representative to advocate for the interests of graduate students within the broader NHERI Network's User Forum.

OFFICERS	President	Membership	STANDING COMMITTEES
	Vice-President	Workshops & Mentoring	
	Secretary	Diversity, Equity & Inclusion	
	Vice-Secretary	Research	
	Treasurer	Networking & Community Building	
	Vice-Treasurer	Technology & Communication	



The Executive Committee and Standing Committee members assumed their roles at the outset of the inaugural year in January 2022. The organization's inaugural Executive Committee meeting convened on February 2, 2022, marking a significant milestone in the NHERI GSC's journey. In its inaugural year, the NHERI GSC focused on the establishment of its foundational framework, avenues for member involvement, as well as various meetings and events.





Meeting Schedule

Early in the year, it was determined that the first Friday of each month would be dedicated to Executive Committee meetings, while the third Friday would be reserved for general body meetings. These general body gatherings facilitate networking and collaboration among members and feature guest speakers along with research breakout sessions, enabling peers with shared research interests to connect and engage in fruitful discussions.





Guest Speaker Series

General body meetings played host to esteemed speakers from diverse domains within natural hazards research. Past speakers have included representatives from the NHERI SimCenter; representatives from NHERI research facilities, such as Kurt Gurley and Patricia Clayton; Chair of the NHERI Science Plan Task Group, Dr. Ian Robertson; Chair of the Technology Transfer Committee, William Holmes; and experts focusing on various topics – including diversity, equity, and inclusion – as well as navigating the publication and peer review process in the field of natural hazards research.

Zoom Socials

Recognizing the importance of building a robust sense of engagement and community among its members, the NHERI GSC initiated Zoom social events. These socials occur at least once per semester and serve as an alternative to the standard general body meetings, fostering a more informal and relaxed atmosphere for interaction and camaraderie.



The inaugural year of the NHERI Graduate Student Council marked a period of significant growth and establishment. By forging a strong organizational structure, fostering meaningful engagement through speaker series and social events, and actively representing the interests of graduate students within the NHERI Network, the NHERI GSC has laid a solid foundation for its future endeavors.

As the organization continues to evolve and expand, NHERI GSC remains committed to its mission of advancing knowledge and collaboration within the natural hazards research community.





MEMBERSHIP TRENDS & DEMOGRAPHICS

The NHERI GSC launched registration for membership on October 5, 2021. Unlike other groups within the natural hazards field, NHERI GSC does not charge a membership fee and registration remains open year-round. Since registration does not close and renewal of membership is not required, the membership information found below is a snapshot of the new memberships captured within the specified timeframe and does not represent the NHERI GSC as a whole.

To become an NHERI GSC member, complete the online registration form found on the NHERI GSC home page (<https://www.designsafe-ci.org/learning-center/nheri-graduate-student-council/>).



Year 1: October 2021 – July 2022

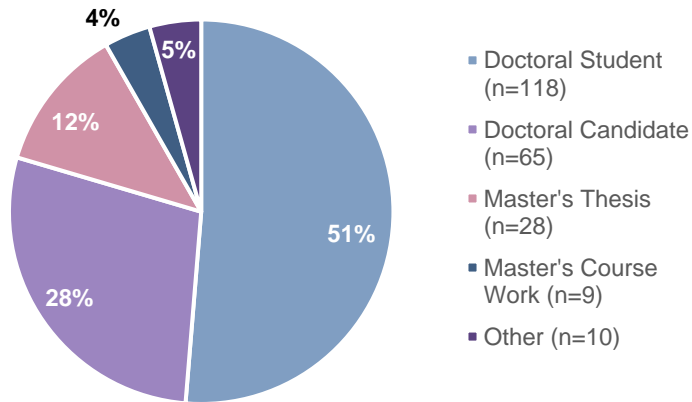
The inaugural year saw tremendous growth and offered a unique community for those working towards a natural hazards-focused degree. In the first year, our graduate community consisted of mainly PhD students (80%), students pursuing a master's degree (16%), and postdoctoral fellows or professors (4%).

As with all NHERI ECO programs, a main objective for NHERI GSC is to support diversity. First-year members represented diverse backgrounds and identities: 38% identified as female, 25% identified as members of an underrepresented group within STEM, 29% reported being the first generation in their family to earn a bachelor's degree, and 41% hailed from 33 countries outside the United States. Diversity is also apparent in the over 44 areas of study represented within the NHERI GSC, with 13% from social science specialties. See Fig. 1 (a-f) for full demographic details.

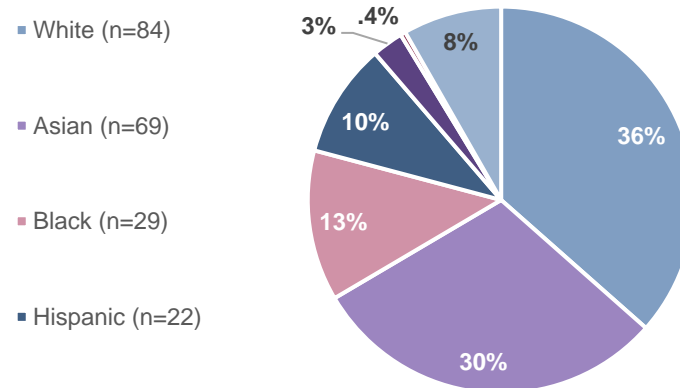


Figure 1 (a-f)

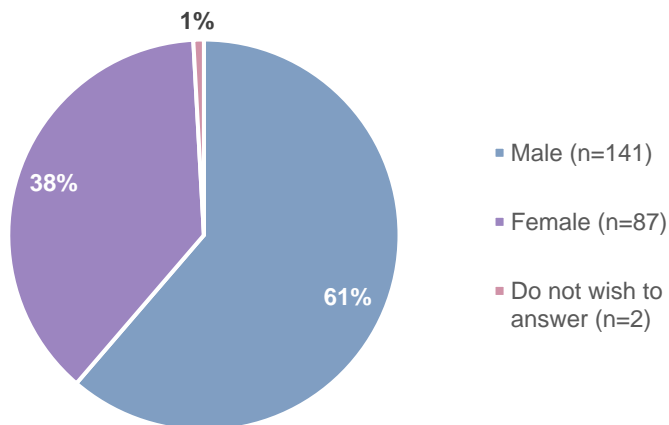
**Level of Degree
NHERI GSC Year 1 (N=230)**



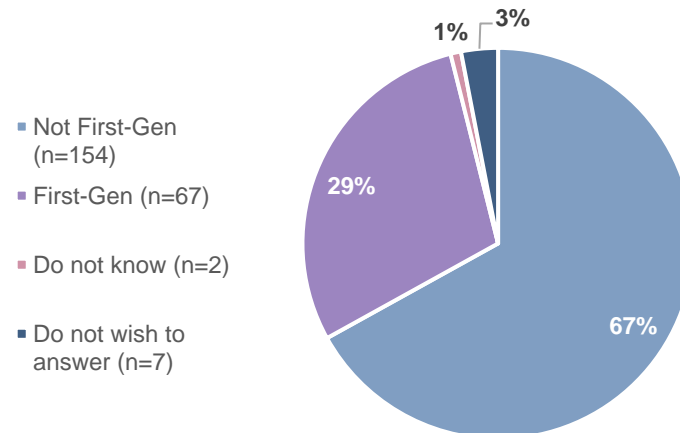
**Race/Ethnicity
NHERI GSC Year 1 (N=230)**



**Gender
NHERI GSC Year 1 (N=230)**

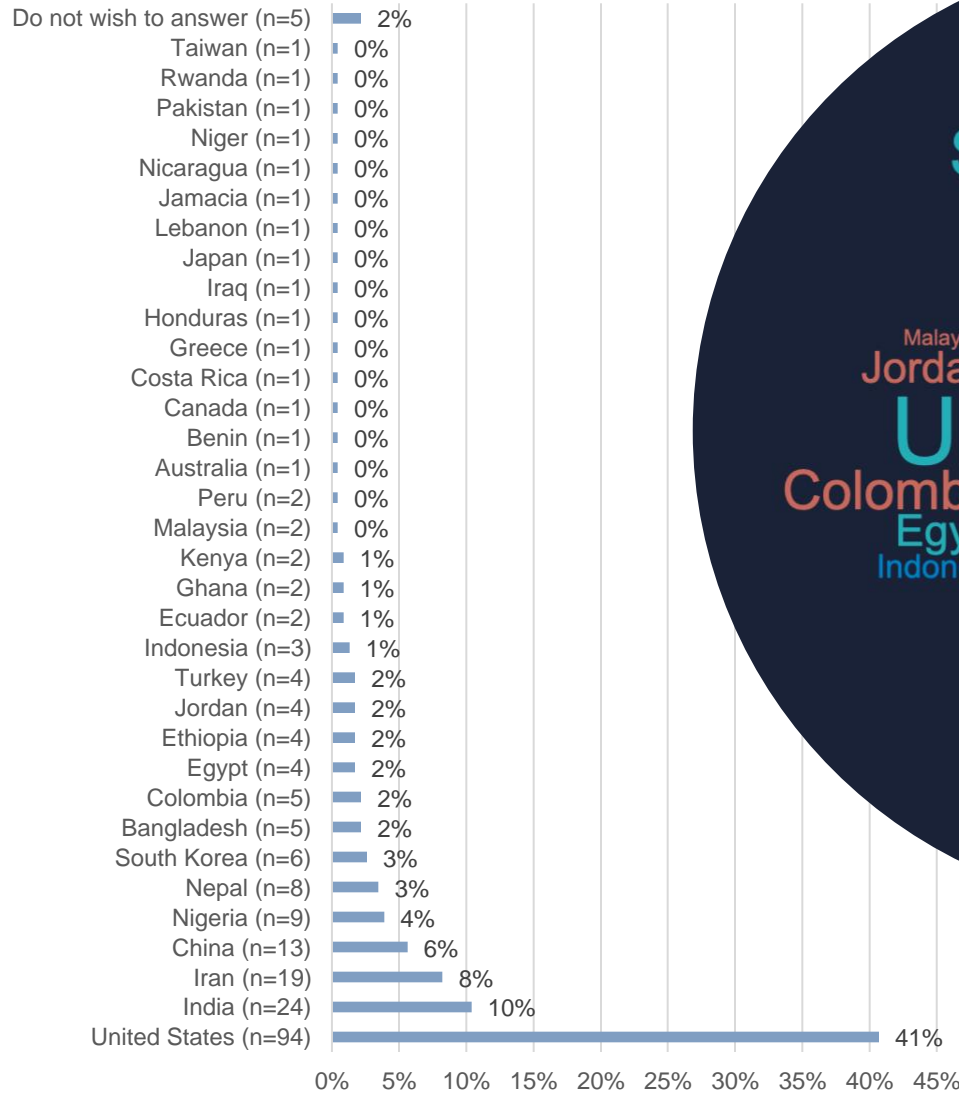


**First-Generation Student
NHERI GSC Year 1 (N=230)**



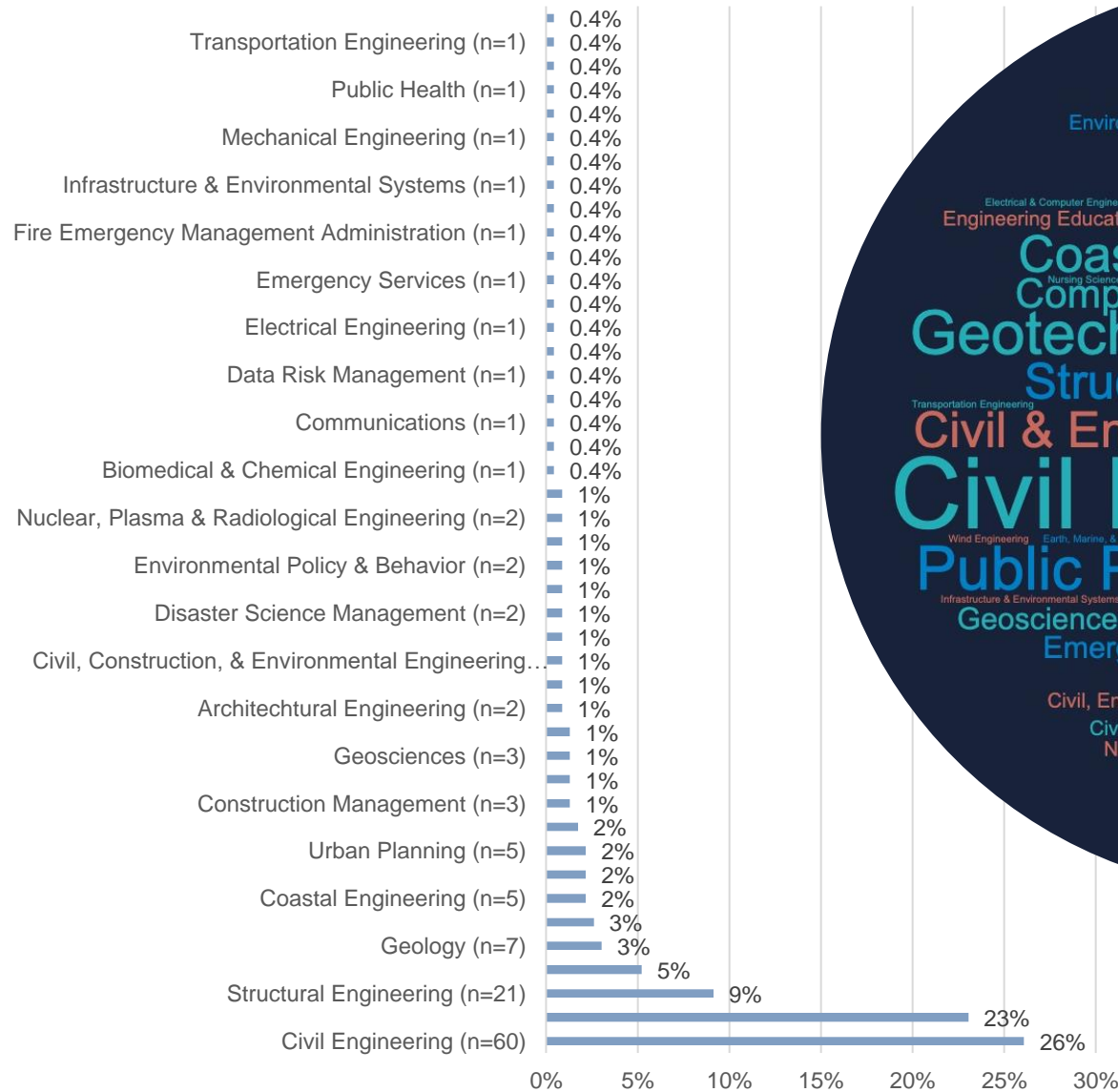


Country NHERI GSC Y1 (N=231)





Areas of Study NHERI GSC Year 1 (N=230)





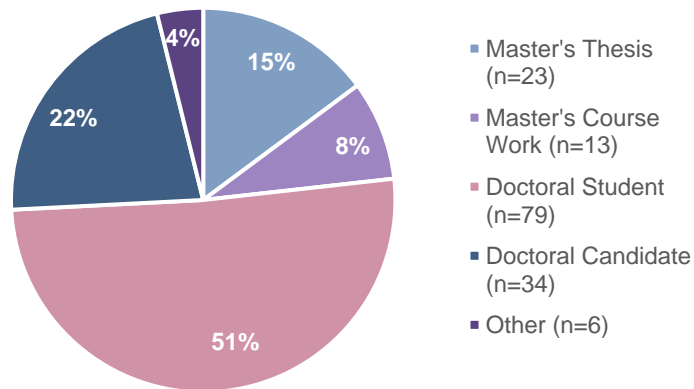
Year 2: August 2022 – July 2023

As the NHERI GSC entered its second year, its membership continued to grow. The second-year registration again comprised mainly PhD students (73%). Representation of students pursuing a master's degree increased (23%), while membership for new postdoctoral fellows or professors remained the same (4%). Membership in the second year saw a small increase in those who identified as female (41%), and students who identified as members of an underrepresented group within STEM remained the same (25%). There was a large increase in the percentage of students who reported being the first generation in their family to earn a bachelor's degree (44%). Thirty-one percent of members hailed from 24 countries outside the United States, including 9 countries not represented in the first year. See Fig. 2 (a-f) for full demographic details.

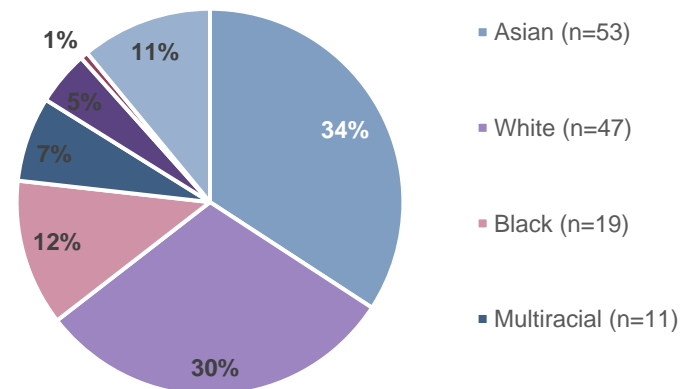


Figure 2 (a-f)

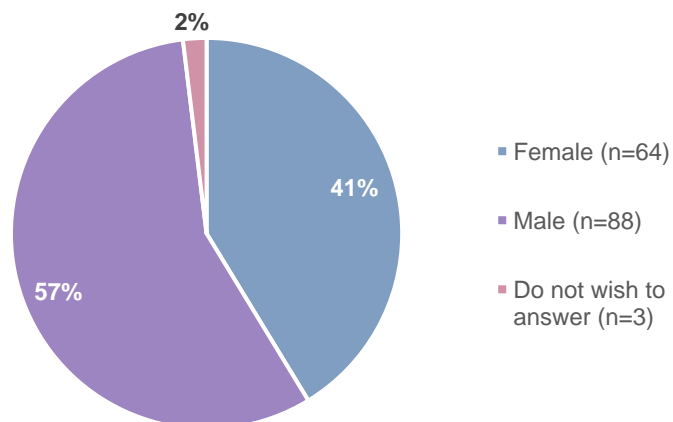
**Level of Degree
NHERI GSC Year 2 (N=155)**



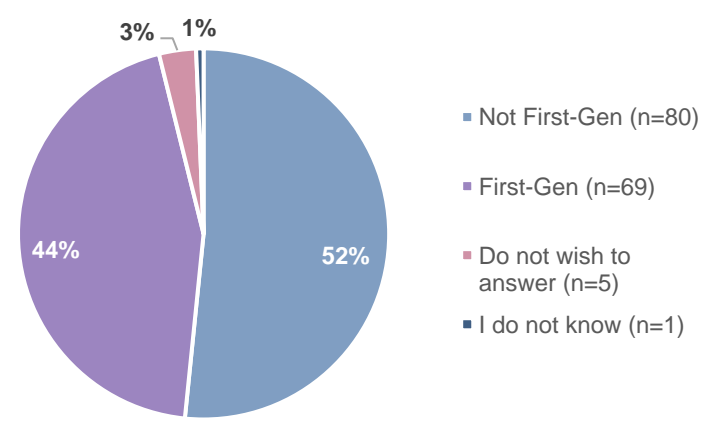
**Race/Ethnicity
NHERI GSC Year 2 (N=155)**



**Gender
NHERI GSC Year 2 (N=155)**

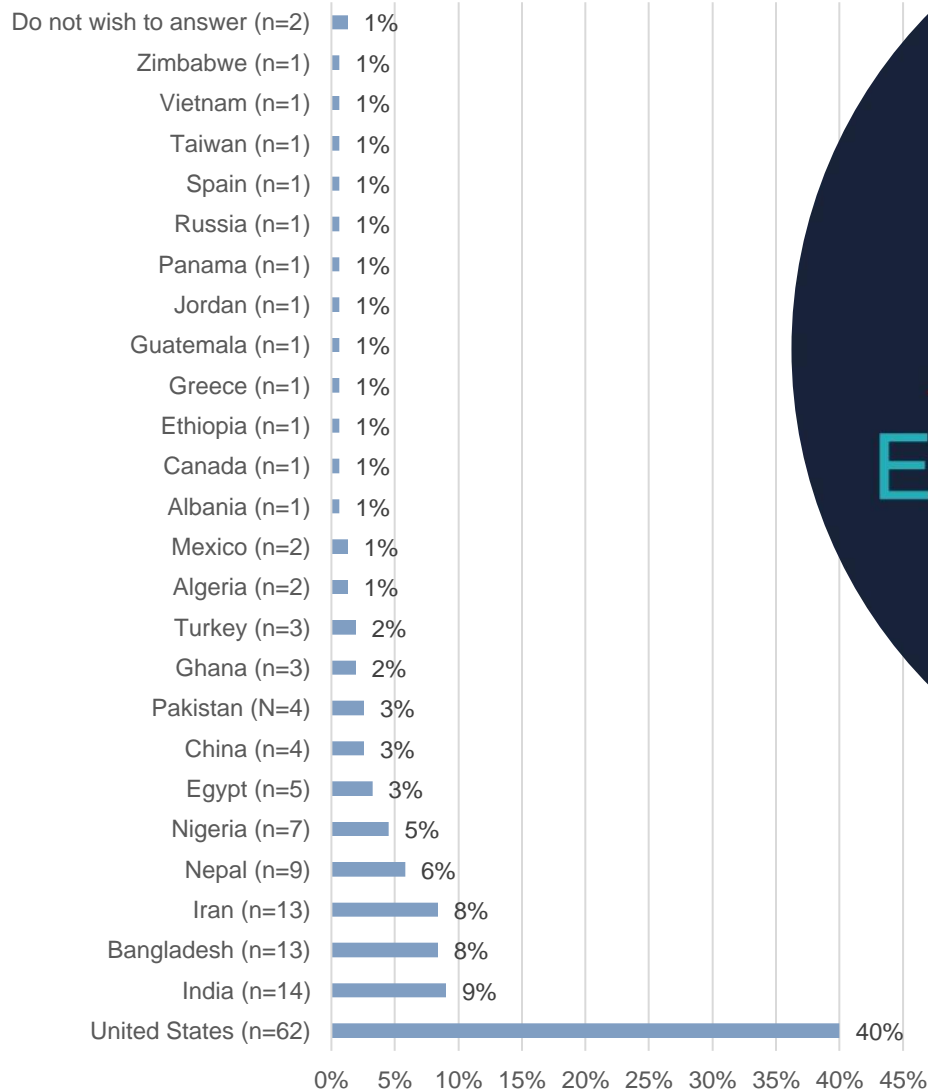


**First-Gen
NHERI GSC Year 2 (N=155)**



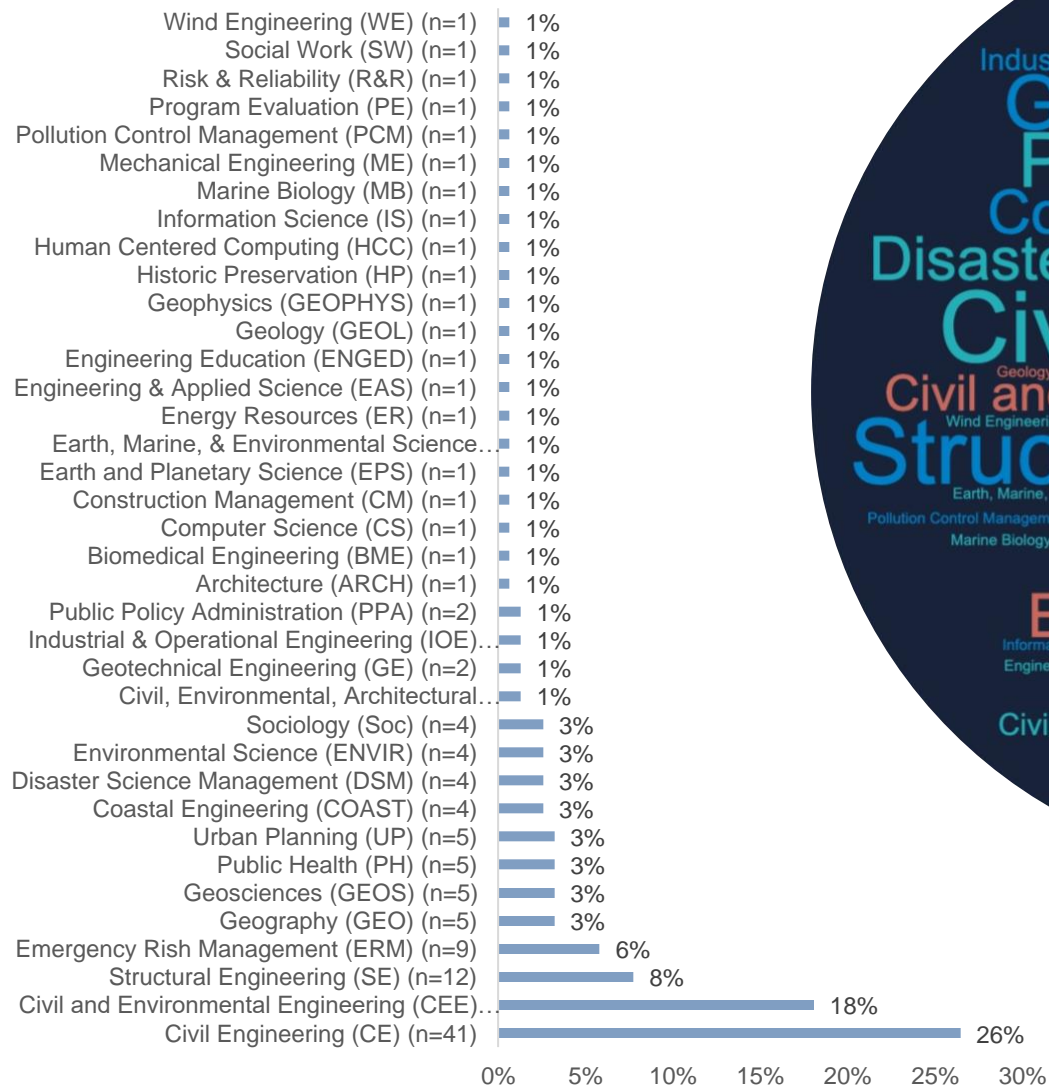


Country Y2 (N=155)





Areas of Study Y2 (N=155)





ACTIVITIES & ACCOMPLISHMENTS

Within the NHERI GSC's inaugural year, our organization's various Standing Committees undertook a range of significant initiatives and activities, each contributing to our mission of fostering collaboration, promoting research excellence, and advancing diversity, equity, and inclusion (DEI) within the natural hazards research community. In this section, we provide summaries of the accomplishments and endeavors of five (5) Standing Committees: Workshops & Mentoring, DEI, Research, Technology & Communication, and the NHERI User Forum Representative. These summaries offer insight into the diverse array of initiatives that these committees undertake and highlight their contributions to NHERI GSC's overarching goals.

Workshops and Mentoring Standing Committee

Since its inception in the fall of 2021, the Workshops & Mentoring Standing Committee within the NHERI GSC has played a pivotal role in fostering engagement and collaboration among natural hazards researchers. The group's accomplishments and activities include:

- ◆ **NSF Proposal Writing Workshop – June 9, 2022:** The inaugural workshop, focused on National Science Foundation (NSF) proposal writing, marked the group's initial endeavor. Subsequently, the group has developed and hosted one workshop per semester.



- ◆ **Workshop Topics Based on Member Input:** Workshop topic — including post-disaster reconnaissance, proposal writing, and academic publishing in natural hazards research — were decided upon through discussions at the Workshops & Mentoring Standing Committee meetings, conducted once per semester.
- ◆ **Collaborative Workshops:** The Workshops & Mentoring Standing Committee collaborated with other groups, such as the Research Standing Committee, to create joint workshops and events. An example is the DesignSafe and SimCenter Tools Workshop Series, in which experts provided insights into available resources, applications, and tools within NHERI.
- ◆ **Contributions to the Natural Hazards Research Summit:** The Workshops & Mentoring Standing Committee played a vital role in organizing a panel session titled “Lifting the Curtain of Academic Publishing in Natural Hazards Research” during the Natural Hazards Research Summit in Washington, D.C. in October 2022.
- ◆ **Inaugural NHERI GSC Mini-Conference and Research Challenge – May 26, 2023:** The Workshops & Mentoring Standing Committee assisted in organizing this successful event, providing a platform for natural hazards researchers worldwide to network and explore collaboration opportunities.



These workshops and events aimed to equip graduate students with insights from experts in the natural hazards field and offered avenues for involvement in research collaborations and reconnaissance efforts.

Diversity, Equity, and Inclusion (DEI) Standing Committee

In its inaugural year, the NHERI GSC DEI Standing Committee diligently pursued its mission to raise awareness of DEI within the natural hazards research community. The committee's efforts focused on fostering an inclusive environment and cultivating the value of diversity. Key achievements and activities include the following:

- ◆ **DEI Resources Page:** The committee established an open-access DEI resources page on the NHERI GSC website. This repository features links to research and resources from various national institutions dedicated to enhancing cultural competencies and promoting equitable research in natural hazards.
- ◆ **Inclusivity Statement:** The NHERI GSC Inclusivity Statement, which all members and invited speakers sign before joining meetings, underscores the community's commitment to promoting inclusivity, equity, and diversity in all spaces and aspects of research practice.



- ◆ **DEI-Focused Guest Speakers:** The committee hosted interdisciplinary natural hazards researchers in its standing committee meetings while focusing on expanding representation from non-STEM fields. Talks covered topics such as vulnerabilities of marginalized communities, DEI in research settings, US flood insurance structures, and more.
- ◆ **DEI Workshops:** The group developed and disseminated two DEI-focused workshops, providing NHERI GSC members and NHERI Research Experience for Undergraduates (REU) students with training in cultural competence and guidance on conceptualizing DEI within natural hazards research.

The NHERI GSC DEI Standing Committee remains committed to its mission and looks forward to further advancing diversity, equity, and inclusion within the NHERI GSC community in the coming years.

Research Standing Committee

- ◆ **NHERI GSC Mini-Conference – May 26, 2023:** In collaboration with the Workshop and Mentoring group, the Research Standing Committee orchestrated the inaugural NHERI GSC Mini-Conference, held on May 26, 2023. This fully virtual, one-day event brought together graduate students in the natural hazards field to showcase their original, multidisciplinary research. The conference featured accepted poster and paper presentations, which encompassed innovative methodologies, empirical research, and interdisciplinary work, including geotechnical engineering, structural



engineering, sociology, demography, computer science, and more. Attendees had the opportunity to engage in networking sessions and foster potential collaborations. The conference sessions included Abstracts, Posters, and Interdisciplinary Research Challenge project presentations.

- ◆ **Interdisciplinary Research Challenge (January 2023 – May 2023):** In collaboration with the Workshop & Mentoring group, the Research Standing Committee orchestrated the inaugural NHERI GSC Mini-Conference, held on May 26, 2023. This fully virtual, one-day event brought together graduate students in the natural hazards field to showcase their original, multidisciplinary research. The conference featured accepted poster and paper presentations, encompassing innovative methodologies, empirical research, and interdisciplinary work across various disciplines, including geotechnical engineering, structural engineering, sociology, demography, computer science, and more. Attendees had the opportunity to engage in networking sessions, fostering potential collaborations. The conference sessions included Abstracts, Posters, and Interdisciplinary Research Challenge project presentations.
- ◆ **NHERI GSC and SimCenter Research Tools Workshop Series (November 2022 – March 2023):** Collaborating with the Workshop & Mentoring group, the Research Standing Committee co-organized the DesignSafe and SimCenter Tools Workshop Series. This five-part, monthly virtual workshop series featured presentations by NHERI SimCenter representatives, showcasing the tools and resources available to NHERI GSC members, students, and researchers. The series effectively disseminated



knowledge about DesignSafe and SimCenter tools to a wide audience of graduate students and research scholars.

- ◆ **Natural Hazards Research Summit Panel (2022):** The Research Chair and Vice-Chair were instrumental members of the NHERI GSC executive committee team that successfully organized a focused discussion panel titled “Lifting the Curtain of Academic Publishing” at the 2022 Natural Hazards Research Summit in Washington, D.C. This panel aimed to shed light on the intricacies of academic publishing within the natural hazards research domain.

Technology & Communication Standing Committee

Since the inception of NHERI GSC in the fall of 2021, the Technology & Communication Standing Committee has played a pivotal role in facilitating communication and information dissemination to our extensive and diverse membership base. Over the past 2 years, the committee has consistently and effectively engaged with our members, ensuring they remain informed about NHERI GSC activities, events, and the latest developments in the natural hazards research field.

The Technology & Communication Standing Committee has spearheaded a multi-platform communication strategy, enabling us to reach hundreds of members worldwide. This strategy includes maintaining an active presence on various platforms, such as our mailing list, LinkedIn group, Facebook, Instagram, and X (formerly known as Twitter). Through these channels, we have ensured that natural hazards graduate students and researchers



are consistently updated on cutting-edge technology, emerging trends, research and development advancements, prominent speakers, and upcoming events. This approach has facilitated both in-person and online participation, fostering a dynamic and engaged community within the NHERI GSC.

The Technology & Communication Standing Committee's commitment to effective communication has been instrumental in strengthening our organization's cohesion and ensuring that members have access to the resources and knowledge necessary to thrive in the field of natural hazards research. Through these initiatives, we have solidified our position as a reliable source of information and a vital hub for our global community of natural hazards enthusiasts.

NHERI User Forum Representative

Starting in January 2023, the NHERI GSC initiated active efforts to enhance collaboration between the NHERI GSC and other NHERI groups through participation in the NHERI User Forum (UF) monthly meetings. These efforts included soliciting feedback and perspectives from NHERI GSC members to influence the annual community user satisfaction survey for NHERI users. Dr. León-Corwin, overseeing the UF survey, made a guest appearance at the August 2023 NHERI GSC meeting to introduce the survey and its significance. The objective is to incorporate input from NHERI GSC members to ensure that the survey optimally addresses graduate students' experiences as current and future NHERI users and enhances their engagement with NHERI resources.





INDIVIDUAL MEMBER SPOTLIGHTS

In the spirit of recognizing the exceptional contributions of our NHERI GSC members, we proudly highlight in this section the achievements and endeavors of individuals who have significantly enriched our community. These dedicated members represent a diverse range of research interests and accomplishments, showcasing the remarkable talent and dedication within our organization.

Jasmine Bekkaye

Jasmine Bekkaye, a PhD student in Civil Engineering at Louisiana State University, specializes in quantifying disaster-generated debris waste and enhancing data-driven prediction models for disaster debris. Her involvement in the NHERI GSC has opened doors to funding opportunities, enabling her to present her work at conferences such as the 47th Annual Natural Hazards Research and Applications Workshop. Jasmine's dedication extends to facilitating panel sessions and networking with fellow natural hazards researchers at the 2022 Natural Hazards Research Summit in Washington, D.C.





Nurullah Bektaş

Nurullah Bektaş, a fourth-year PhD student at Széchenyi István University, Győr, Hungary, has channeled his efforts into developing rapid assessment methods for the seismic vulnerability of existing buildings. Employing artificial intelligence algorithms, including machine learning and neural networks, Nurullah's research aims to preemptively assess building conditions to mitigate earthquake-induced damage. His active participation within the NHERI GSC has provided numerous growth opportunities. Nurullah has presented his research at NHERI GSC meetings and conferences, and the NHERI Hackathon, and benefitted from the valuable feedback and collaborative experiences.



Jordan Nakayama

Jordan Nakayama is a PhD student in Structural Engineering at Auburn University whose research focuses on pioneering a formal framework for advancing knowledge discovery within the realm of post-windstorm datasets. Employing a flexible, data science approach, Jordan combines established theory and reconnaissance data to unveil previously unknown factors influencing windstorm-damage relationships. Her contributions extend beyond her research, as she serves as the Secretary of the NHERI GSC, actively participating in





various organizational opportunities. Jordan's dedication led to her receiving the prestigious NSF travel award to attend the 2022 NHERI Summer Institute, as well as funding to present her groundbreaking work on "Hybrid Framework for Post-Hazard Building Performance Assessments" at the 14th Americas Conference on Wind Engineering.

Rakesh Salunke

Rakesh Salunke, a Doctoral Candidate at Jackson State University, brings his expertise to geotechnical asset management and natural hazards impacts on geo-infrastructure assets. His work encompasses investigations, data analytics, and the application of geophysical, remote sensing, and artificial intelligence and machine learning techniques. Rakesh's commitment to the NHERI GSC is evident through his role as the Vice-Chair of Research. He played a pivotal role in organizing the inaugural Mini-Conference, Collaborative Research Challenge, and the NHERI GSC and SimCenter Research Tools Workshop series. Rakesh's contributions were also featured in the NHERI community newsletter, highlighting interdisciplinary research within the NHERI GSC.





Harman Singh

Harman Singh, a dual-title PhD student in Geography and Climate Science at Penn State University, has been a driving force as the Vice-Chair of the NHERI GSC DEI Standing Committee since 2021. Her research delves into stakeholder perceptions of urban pluvial floods in India, exploring their intersections with meteorological history and policymaking. Harman's dedication to the NHERI community earned her the NHERI Education and Community Outreach (ECO) Award #2129782, which facilitated her attendance at the Natural Hazards Research Summit 2022. Her invaluable contributions to discussions on research priorities in natural hazards engineering research have left an indelible mark.



These exemplary members, alongside others within the NHERI GSC, have harnessed the organization's resources and opportunities to further their research and connect with peers. Their involvement in workshops and events has not only expanded their networks but also elevated their profiles within the field of natural hazards research. These individual spotlights serve as a testament to the exceptional talent and collaborative spirit that defines the NHERI GSC community.



Finally, we would also like to recognize all the additional members who presented their work at the NHERI GSC Mini-Conference:

- ◆ Amer Abukhalaf, *University of Florida*
- ◆ Amina Meselhe, *Oregon State University*
- ◆ Jiayun Shen, *Clemson University*
- ◆ Julie Elliott, *University of Delaware*
- ◆ Natalie Coleman, *Texas A&M University*
- ◆ Niko Grisel Todorov, *Chapman University*
- ◆ Taylor Heath, *University of Pennsylvania*
- ◆ Teye Yevuyibor, *Louisiana State University*



FINANCIAL OVERVIEW

The NHERI GSC does not receive annual operation funds. Instead, the NHERI NCO and ECO both fund opportunities for GSC members' to attend the NHERI Summer Institute as well as other academic events as funds are available. Previous funding for NHERI GSC students has been available for the following conferences and events:

- ◆ The 2022 Americas Conference of Wind Engineering
- ◆ The 2022 NHERI Summer Institute
- ◆ The 2022 Natural Hazards Research Summit,
- ◆ The 2023 NHERI Summer Institute where twelve, five, eight, and nine students, respectively, were selected to receive travel awards.

Funding to attend these events included event registration, plus travel and housing for multiple days. NHERI GSC and its members are immensely grateful for this generous support that provides invaluable learning and networking opportunities to students.

Currently, NHERI GSC members are in the process of writing a proposal for the NSF-funded Innovations in Graduate Education (IGE) Program. This proposal is entirely student-written and will be housed under the University of Texas at San Antonio. If funded, the IGE Program would provide monetary support for the GSC to continue collaborations and multi-disciplinary research incubating within the NHERI GSC since the group's inception.



ACKNOWLEDGMENTS

The NHERI GSC is grateful for the support of the NHERI network throughout its first two years. The group would not be possible without the contributions of NHERI NCO, NHERI ECO, and many of the NHERI sites and facilities. We would like to recognize the following individuals who provided support, knowledge, feedback, and/or mentorship as the group found its footing.

The NHERI GSC thanks the NHERI NCO for its continued support and funding. In total, the NHERI NCO has funded fourteen NHERI Summer Institute participants in 2022 and 2023, twelve Americas Conference of Wind Engineering presenters in 2022, and eight Natural Hazards Research Summit 2022 presenters from the NHERI GSC. Your contribution has developed networks of support for these participants and helped prepare our members for future work that will mitigating damage from natural hazards and prevent loss of life, in alignment with the NHERI Science Plan. We are extremely grateful for your generosity and kind support.

The NHERI GSC also thanks the NHERI ECO Committee for its continued commitment to developing educational programming to support and broaden the pipeline of natural hazards scholars through the NHERI REU Summer Program, NHERI GSC, and NHERI Summer Institute.



Further, NHERI GSC would like to thank the NHERI sites, facilities, committees, and individuals that have shared their expertise, knowledge, and resources with our membership in general meetings and workshops over the past two years. Thank you for mentoring the next generation of natural hazard researchers.

- ◆ **NHERI Technology Transfer Committee** – William Holmes
- ◆ **University of California Berkeley, SimCenter** – Adam Zsarnóczyay, Aakash Bangalore Satish, Sang-ri Yi, Kuanshi Zhong, Wenyang Zhang, Steven Gavrilovic, Scott Brandenburg
- ◆ **University of Florida, Boundary Layer Wind Tunnel** – Kurt Gurley, Jennifer Bridge
- ◆ **University of Colorado Boulder, CONVERGE** – Rachel Adams, Candace Evans, Lori Peek
- ◆ **NHERI NCO** – Dan Zehner
- ◆ **NHERI GSC member presenters** – Emmaleah Jones, Nurullah Bektas, Md Sariful Islam, Jasmine Bekkaye, Elliot Nichols, Saanchi Singh Kaushal Ben Roston, Niko Grisel Todorov, Taylor Lightner, Natalie Coleman, Amer Hamad Issa Abukhalaf, Taylor Heath, Rakesh Salunke, Raimi Morufu Olalekan, Mouloud Hamidatou, Chengxin Feng, Benjamin B. Labar, Mohammad Ali Izadifar, Rajendra Gautam, Amina Meselhe, Harman Singh, Holly Davies, Olaniyi Afolayan
- ◆ **University of Washington, RAPID** – Mike Grilliot
- ◆ **Geotechnical Extreme Event Reconnaissance (GEER)** – David Frost
- ◆ **Nearshore Extreme Event Reconnaissance (NEER)** – Britt Raubenheimer
- ◆ **Structural Engineering Extreme Event Reconnaissance (StEER)** – Tracy Kijewski-Correa
- ◆ **University of Texas at Austin, DesignSafe** – Tim Cockerill
- ◆ **NHERI Science Plan Task Group** – Ian Robertson
- ◆ **Pennsylvania State University** – Manzhu Yu, Helen Greatrex
- ◆ **University of North Texas** – Ronald Schumann
- ◆ **University of Georgia** – Marshall Shepherd



- ◆ **Virginia Tech University & NHERI Science Plan Task Group** – Jennifer Irish
- ◆ **Stanford University** – Jack Baker
- ◆ **Bautech USA, Inc. & Brilla Trading, LLC** – Sergio Prah
- ◆ **NHERI User Forum** – Maggie Leon-Corwin
- ◆ **Indian Institute of Technology Delhi** – Sumeet Kumas Sinha
- ◆ **Dalhousie University** – Haorui Wu

Annual Report Contributing Authors

NHERI GSC acknowledges the NHERI GSC Executive Committee for contributing content for this annual report. The following individuals provided additional assistance in writing, compiling, and copyediting the document:

- ◆ Jordan Nakayama
- ◆ Taylor Heath
- ◆ Robin Nelson
- ◆ Julie Elliott
- ◆ Anna Gasha



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