



SSEER
SOCIAL SCIENCE
EXTREME EVENTS
RESEARCH

2020 SSEER CENSUS

The results of the 2020 Social Science Extreme Events Research (SSEER) Census are based on the responses gathered from social scientists who completed the [SSEER membership survey](#) between its release date on July 8, 2018 and December 31, 2020.

AS OF DECEMBER 31, 2020,
1,230 RESEARCHERS HAD JOINED THE
SSEER NETWORK.

In many instances in this annual report, we compare the results of the 2020 Census to what we previously published in the [2018 Census](#) and [2019 Census](#). Where possible and relevant, we separate data by year for 2018, 2019, and 2020 to provide greater context regarding the continued growth and evolution of the network.

HOW MANY SOCIAL SCIENTISTS HAVE JOINED THE SSEER NETWORK?

As of December 31, 2020, 1,230 researchers had joined the SSEER network. This represents a 29.61% increase in membership from December 31, 2019. While the majority of members signed up in 2018 (N = 648; 52.68%), which was the first year of the SSEER survey release, the network continued to grow in 2019 (N = 301; 24.47%) and 2020 (N = 281; 22.85%) (see **Figure 1**).

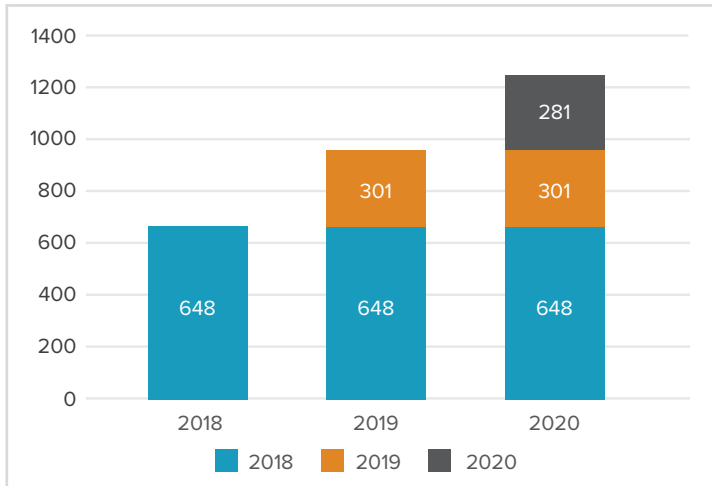


Figure 1. SSEER Membership by Year, 2018-20.

WHERE ARE SSEER RESEARCHERS LOCATED?

The online **SSEER map** is organized by United Nations (UN) regions and subregions. Users can search for researchers by name, location, disciplinary foci, methodological expertise, or the types of hazards or disasters they study (see **Figure 2**).

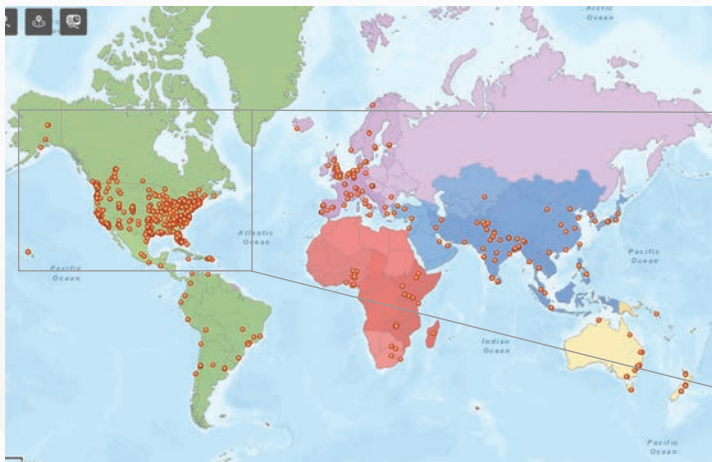


Figure 2. SSEER Interactive Web Map.

Figure 3 shows the region of residence of the SSEER members who joined the network by December 31, 2020. Most SSEER members reside in the Americas (N = 979; 79.59%). Of those who do not live in the Americas, most are in Europe (N = 105; 8.54%), Asia (N = 78; 6.34%), or Oceania (N = 44; 3.58%). Fewer than 2% of members reside in Africa (N = 22; 1.79%). Only two SSEER members (.16%) did not provide a region of residence at the time they joined the network.

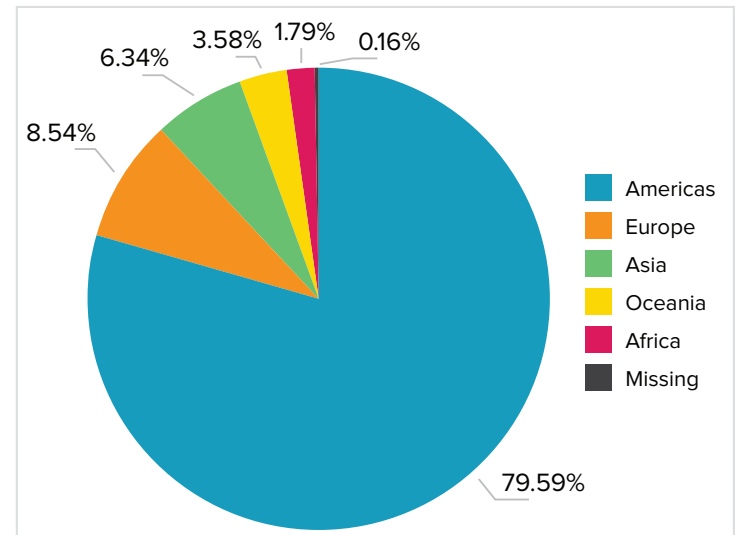


Figure 3. SSEER Researchers by UN Region.

Table 1 shows the number of SSEER members by region, subregion, and country. Overall, regional representation changed little between 2018 and 2020, although SSEER has continued to gain new members from additional countries each year the network has existed. For example, SSEER gained its first member in five countries in Eastern Africa during 2020; before, only one SSEER member hailed from this subregion.

72% OF ALL SSEER MEMBERS RESIDE IN THE UNITED STATES.



U.S. SSEER Members from Interactive Web Map, 2020.

UN Region	# of SSEER Members in the Region	UN Subregion	# of SSEER Members in the Subregion	Country	# of SSEER Members in the Country
Africa	22	Eastern Africa	10	Ethiopia	2
				Kenya	2
				Madagascar	1
				South Sudan	1
				Uganda	1
				Zambia	3
		Southern Africa	6	Botswana	1
				South Africa	5
		Western Africa	6	Nigeria	6
Americas	979	Caribbean	3	The Bahamas	2
				Jamaica	1
		Central America	3	Guatemala	1
				Mexico	2
		Northern America	939	Canada	53
				United States	886
		South America	34	Argentina	7
				Bolivia	1
				Brazil	12
				Chile	7
				Colombia	2
				Ecuador	1
				Peru	3
Venezuela	1				
Asia	78	Eastern Asia	20	Hong Kong	1
				Japan	11
				Republic of China	6
				Republic of Korea	2
		South-Eastern Asia	12	Indonesia	3
				Malaysia	1
				Philippines	3
				Singapore	1
				Thailand	3
				Union Republic of Myanmar	1
		Southern Asia	39	Afghanistan	1
				Bangladesh	5
				Bhutan	1
				India	18
				Iran	1
				Nepal	7
				Pakistan	5
				Sri Lanka	1
		Western Asia	7	Israel	1
Kingdom of Saudi Arabia	1				
Turkey	4				
United Arab Emirates	1				

Table 1. SSEER Researchers by UN Region, Subregion, and Country (continued on page 4).



UN Region	# of SSEER Members in the Region	UN Subregion	# of SSEER Members in the Subregion	Country	# of SSEER Members in the Country
Europe	105	Eastern Europe	1	Romania	1
		Northern Europe	50	Denmark	3
				Finland	4
				Iceland	1
				Norway	2
				Scotland	1
				Sweden	4
				United Kingdom	35
		Southern Europe	23	Greece	2
				Italy	5
				Portugal	12
				Spain	4
		Western Europe	31	Austria	5
				France	9
				Germany	9
The Netherlands	7				
Switzerland	1				
Oceania	44	Australia and New Zealand	43	Australia	19
				New Zealand	24
		Melanesia	1	Solomon Islands	1
				Missing	2
				Total	1,230

Table 1. SSEER Researchers by UN Region, Subregion, and Country (continued from page 3).



WHAT IS THE DISCIPLINARY BACKGROUND AND EXPERTISE OF SSEER RESEARCHERS?

As noted in our prior annual reports, there is no single, universal **definition for which disciplines are included in the social sciences**. There are, however, a core set of disciplines that are often included under the umbrella of the social sciences that focus on individuals, groups, institutions, and/or society.

The SSEER membership survey asks researchers to identify their primary discipline—or set of disciplines for those with multidisciplinary training—as shown in **Figure 4**. The figure does not sum to the number of SSEER members (N = 1,230) because researchers could, and often did, select more than one discipline.

Of the 20 disciplines offered on the SSEER survey, just under one-third of members identified with Disaster Science (N = 395; 32.11%). The next most frequently selected disciplines included Sociology (N = 277; 22.52%), Decision-Making and Risk Analysis (N = 268; 21.79%), Geography (N = 263; 21.38%), Public Administration/Emergency Management (N = 262; 21.30%), and Planning (N = 233; 18.94%). Other disciplines that were selected by SSEER members are shown in **Figure 4**.

WHAT ARE THE EDUCATIONAL AND PROFESSIONAL BACKGROUNDS OF SSEER RESEARCHERS?

The SSEER membership survey prompts researchers to share information about their highest level of education completed (see **Figure 5**). Most SSEER researchers hold a doctoral degree (N = 772; 62.76%). The second most common degree held by researchers is a master's degree (N = 327; 26.59%). Fewer members held a bachelor's degree (N = 81; 6.59%) or associate's degree (N = 14; 1.14%).

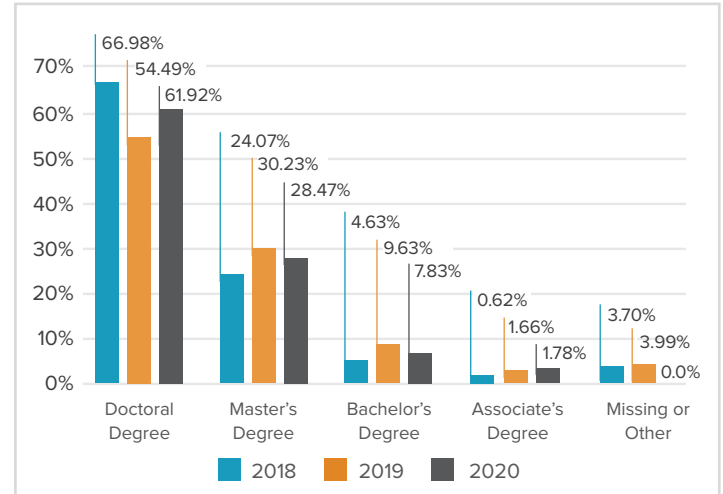
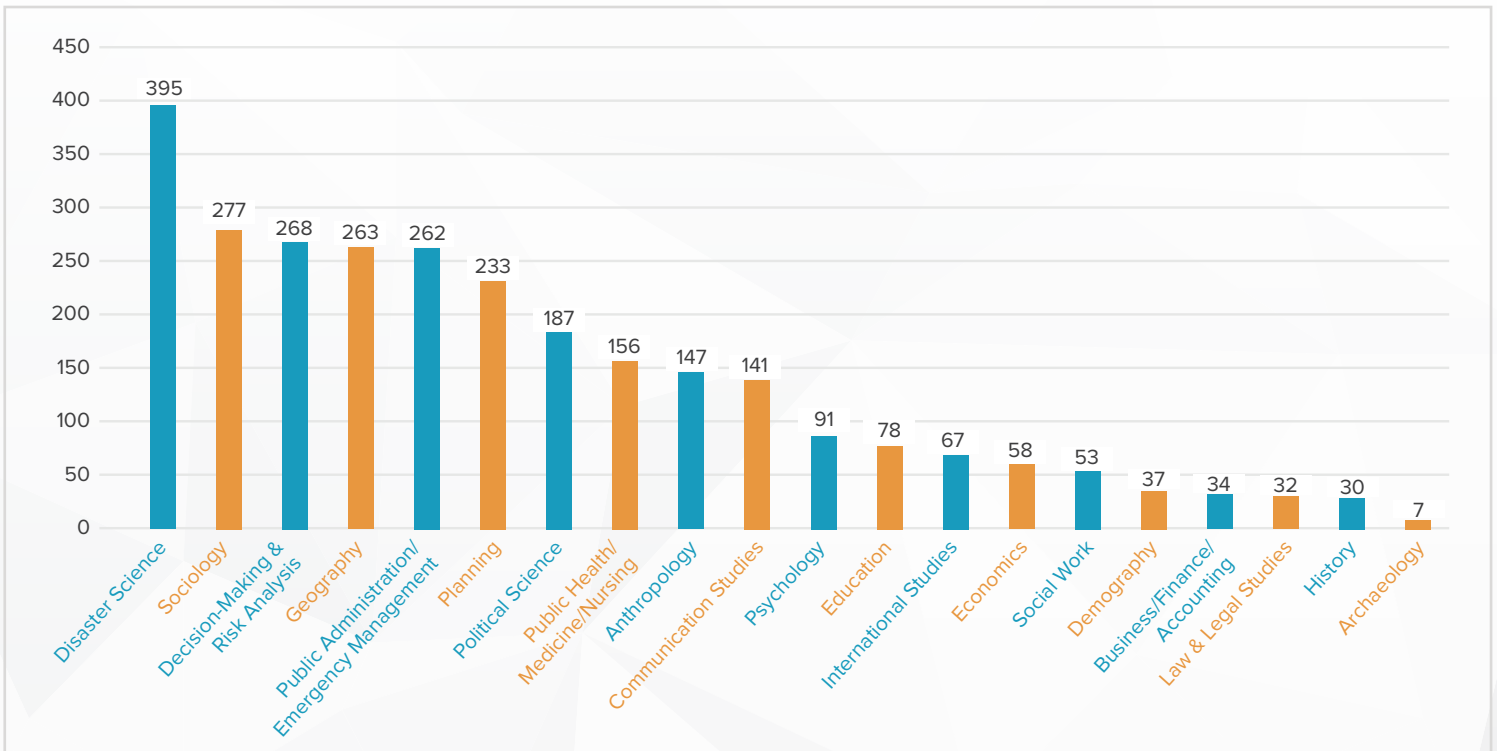


Figure 5. SSEER Researchers by Highest Academic Degree Completed, 2018-20.

Figure 4. SSEER Researchers by Disciplinary Background.



NEARLY 63% OF SSEER MEMBERS HAVE A DOCTORAL DEGREE.

In terms of primary professional status, most SSEER researchers self-identified as academic researchers (N = 718; 58.37%), followed by students (N = 212; 17.24%) and government researchers (N = 110; 8.94%). Fewer members identify as non-profit researchers (N = 60; 4.88%), independent researchers (N = 51; 4.15%), or private sector researchers (N = 30; 2.44%). The remaining members identified as another kind of professional, indicated they were retired, or had missing data. **Table 2** shows that the primary professional statuses of SSEER members have been fairly consistent across 2018, 2019, and 2020.

	2018		2019		2020		Total	
	N	%	N	%	N	%	N	%
Academic Researcher	398	61.42	156	51.83	164	58.36	718	58.37
Student	103	15.90	60	19.93	49	17.44	212	17.24
Government Researcher	57	8.80	31	10.30	22	7.83	110	8.94
Non-Profit Researcher	26	4.01	17	5.65	17	6.05	60	4.88
Independent Researcher	27	4.17	14	4.65	10	3.56	51	4.15
Private-Sector Researcher	14	2.16	11	3.65	5	1.78	30	2.44
Other or Missing	23	3.55	12	3.99	14	4.98	49	3.98
Total	648	100	301	100	281	100	1,230	100

Table 2. SSEER Researchers by Primary Professional Status, 2018-20.

WHAT IS THE LEVEL OF INVOLVEMENT OF SSEER MEMBERS IN HAZARDS AND DISASTER RESEARCH?

In 2020, our team published a typology of levels of involvement in the hazards and disaster field (see [Peek, Champeau, Austin, et al. 2020](#)). We use that typology in the SSEER membership survey and ask respondents to select which of the following best describes their current status as a hazards and disaster researcher:

- **Core Researcher:** Strongly self-identifies as a hazards or disaster researcher, has a deep commitment to the field, and has engaged in hazards or disaster research for a sustained amount of time.

- **Periodic Researcher:** Is not primarily engaged in hazards or disaster research but focuses on related topics from time to time throughout one’s professional career.
- **Situational Researcher:** Not previously trained or involved in the hazards or disaster field but had the opportunity to study new phenomena or processes based on a situational event; for example, a researcher who undertook a study after their community was affected by a major disaster.
- **Emerging Researcher:** Includes students and others who are new to the hazards or disaster field and who are still learning about its disciplinary, multidisciplinary, or interdisciplinary histories, theories, methods, and approaches. Emerging researchers may have limited experience or may not have yet conducted their own original empirical research.

Most SSEER members self-identify as core researchers (N = 519; 42.20%), followed by emerging researchers (N = 297; 24.15%), periodic researchers (N = 272; 22.11%), and situational researchers (N = 95; 7.72%). **Figure 6** illustrates patterns of researcher self-identification for 2018, 2019, and 2020.

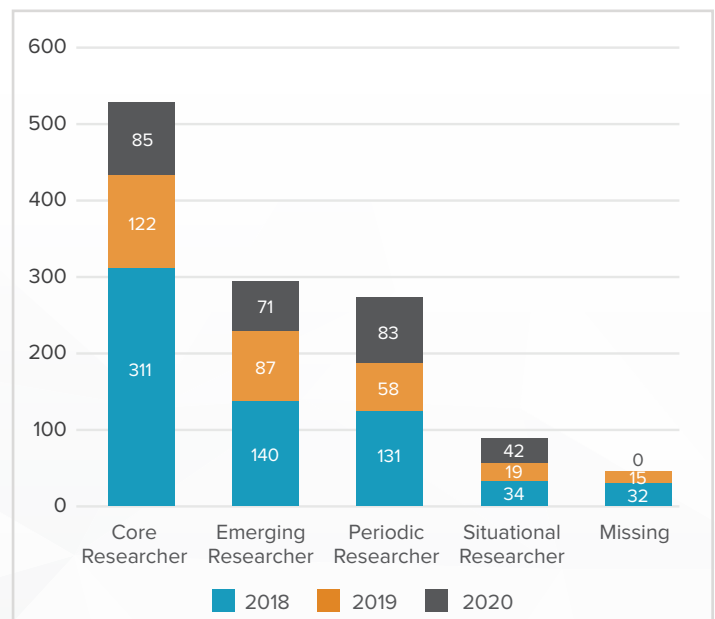


Figure 6. SSEER Researchers by Level of Involvement in the Field, 2018-20.

42% OF SSEER MEMBERS IDENTIFY AS CORE RESEARCHERS, MEANING THEY HAVE A DEEP COMMITMENT TO THE FIELD AND HAVE ENGAGED IN DISASTER RESEARCH FOR A SUSTAINED AMOUNT OF TIME.



WHAT METHODS AND APPROACHES DO SSEER RESEARCHERS USE IN THEIR WORK?

Social scientists use a range of methods and approaches to collect and analyze data. To characterize the methodological skills among this community, the SSEER membership survey asks researchers to identify each of their primary approaches to data collection and analysis. As summarized in **Figure 7**, the most popular methodological approaches include survey research (N = 734; 59.67%), case studies (N = 728; 59.19%), and in-depth interviews (N = 727; 59.11%). The numbers in the figure do not sum to the sample size of 1,230 because researchers had the option to choose more than one approach, and most did so.

WHAT PHASES OF THE DISASTER CYCLE HAVE SSEER RESEARCHERS STUDIED?

Social scientists who research hazards and disasters often study distinct disaster phases including preparedness, emergency response, short-term reconstruction, long-term recovery, and mitigation (see **Figure 8**).

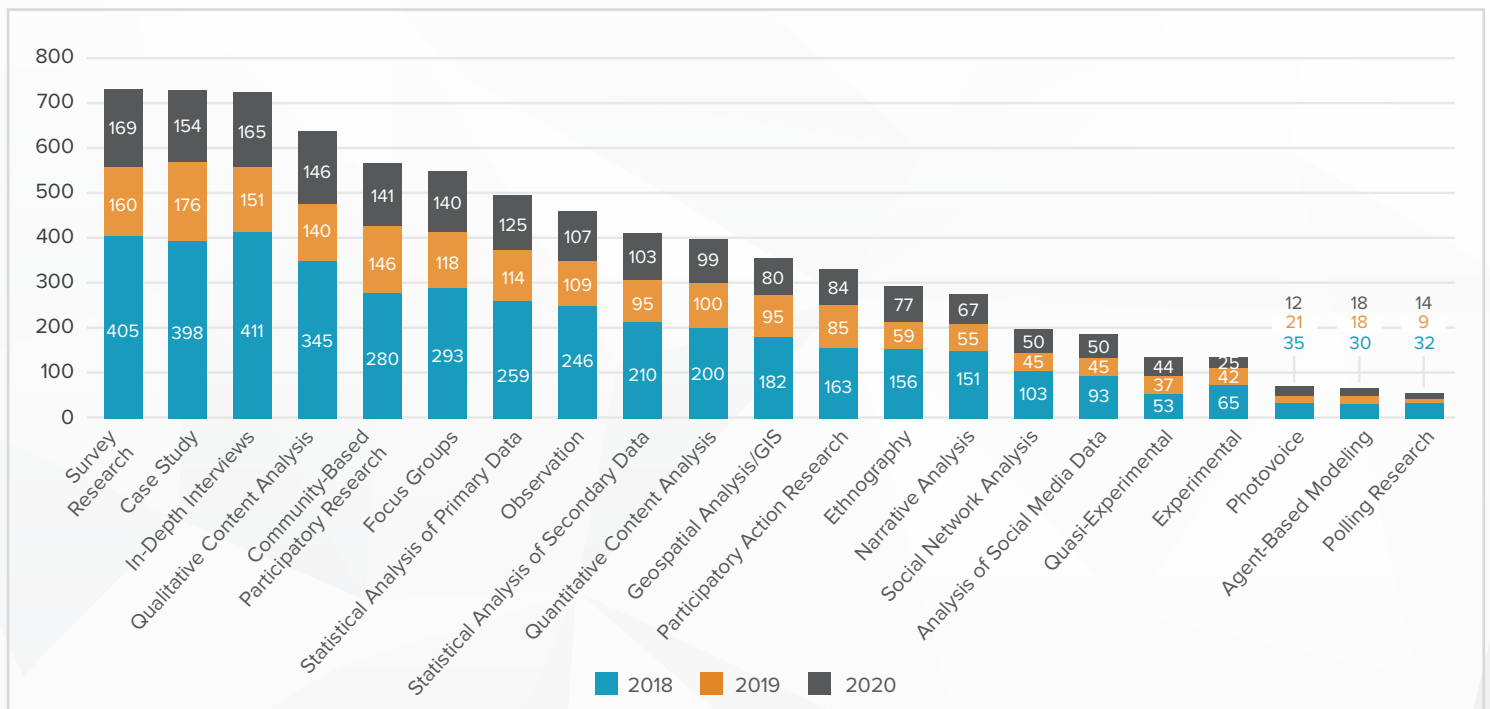


Figure 8. The Disaster Cycle.

Figure 9 shows the different phases across the disaster cycle that SSEER researchers have studied. Most SSEER researchers have focused on disaster preparedness (N = 924; 75.12%), followed by mitigation (N = 762; 61.95%), long-term recovery (N = 713; 57.97%), emergency response (N = 705; 57.32%), and short-term reconstruction (N = 447; 36.34%). The numbers here and in the figure do not sum to the sample size of 1,230 because researchers had the option to choose more than one phase.

SSEER MEMBERS HAVE CONTRIBUTED NEW KNOWLEDGE ACROSS EVERY PHASE OF THE **DISASTER CYCLE**.

Figure 7. Preferred Methodological Approaches of SSEER Researchers, 2018-20.



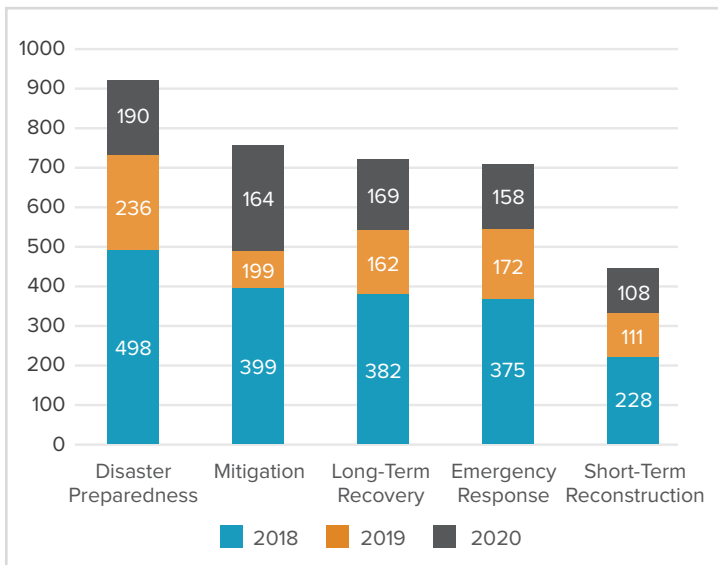


Figure 9. Disaster Phases Studied by SSEER Researchers, 2018-20.

WHAT HAZARDS OR DISASTERS HAVE SSEER RESEARCHERS STUDIED?

Figure 10 includes a summary of the hazard types that SSEER members indicated having studied. As shown, the majority of SSEER members study natural hazards (N = 1,129; 91.79%), which include geophysical, meteorological, hydrological, climatological, biological, and extraterrestrial events. In addition, just over one-fourth of respondents indicated that they study technological hazards (N = 333; 27.07%) such as industrial accidents, transport accidents, and toxic exposures. The smallest portion of SSEER respondents indicated that they focus on terrorism or other willful acts of violence (N = 226; 18.37%). The numbers in the figure do not sum to the sample size of 1,230 because researchers had the option to choose more than one hazard type.

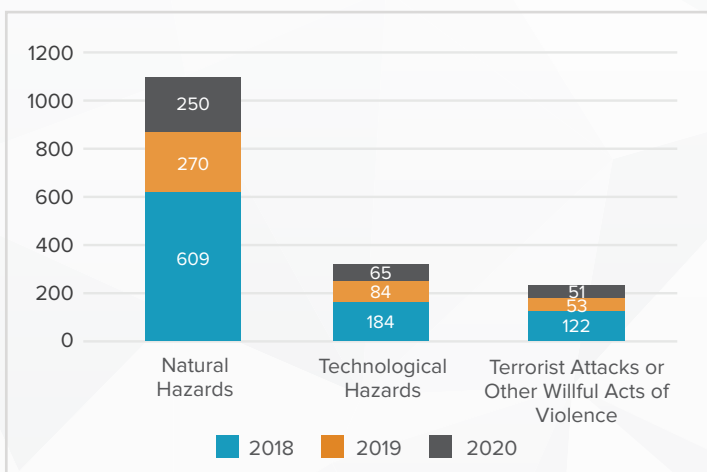


Figure 10. Hazard Types Studied by SSEER Researchers, 2018-20.

The SSEER membership survey asks respondents to identify up to 10 specific, named disaster events that they have studied during their career. Between 2018 and 2020, we received more than 1,100 unique responses to this question, which include disasters studied across several centuries and multiple geographies. The disasters that SSEER researchers have studied, along with keywords characterizing research expertise, are viewable through each [researcher's profile in the SSEER map](#).

SSEER RESEARCHERS HAVE
STUDIED MORE THAN
1,100 UNIQUE DISASTER EVENTS.

Based on responses detailing disasters studied by name of event and year, nearly one-quarter of SSEER members either refrained from responding to the question or had not studied any disasters (N = 299; 24.31%). From there, a nearly linear pattern emerged in the data such that, for the most part, SSEER members were more likely to respond that they had studied fewer events than more events. Specifically, nearly as many respondents had studied one disaster event (N = 175; 14.23%) as had studied two (N = 172; 13.98%) or three (N = 159; 12.93%) disaster events. A moderate number of SSEER members studied four (N = 104; 8.46%), five (N = 86; 6.99%), or six events (N = 59; 4.80%). Less than 4% of SSEER members had researched seven (N = 42; 3.41%), eight (N = 31; 2.52%), or nine events (N = 23; 1.87%), respectively. Just under 5% of members had researched 10 events (N = 60; 4.88%), and a small number of members responded with 11 or more events (N = 20; 1.63%) (see **Figure 11**).

SSEER researchers have studied a wide range of events. The top 10 most frequently studied disasters, however, all occurred in the 21st century and most of these events happened in the United States (see **Table 3**). These results should be interpreted with care since this is not yet a complete census of the entire social science community, and SSEER membership is heavily concentrated in the United States. The results are still suggestive of which events receive the most attention and in which parts of the world.

HURRICANES KATRINA, HARVEY, MARIA, SANDY, AND IRMA ARE THE TOP FIVE MOST STUDIED DISASTER EVENTS IN THE SSEER DATABASE.

In terms of the most named events in the database, Hurricane Katrina in 2005 was the most commonly studied disaster event (N = 245; 19.92%) followed by Hurricanes Harvey in 2017 (N = 149; 12.11%), Maria in 2017 (N = 120; 9.76%), Sandy in 2012 (N = 119; 9.67%), and Irma in 2017 (N = 90; 7.32%). Other frequently studied disaster events include the 9/11 terrorist attacks in 2001 (N = 75; 6.10%), the 2004 Indian Ocean earthquake and tsunami (N = 65; 5.28%), and the 2011 Fukushima/Great East Japan earthquake and tsunami (N = 59; 4.80%).

A high level of interest in the novel coronavirus earned it a spot among the most commonly researched disasters in this 2020 Census, with 4.47% of SSEER members (N = 55) indicating that they had studied some aspect of the global pandemic. This surpassed the proportion of members who studied the 2010 BP Deepwater Horizon Oil Spill (N = 51; 4.15%).

	N	%
Hurricane Katrina, 2005	245	19.92
Hurricane Harvey, 2017	149	12.11
Hurricane Maria, 2017	120	9.76
Hurricane Sandy, 2012	119	9.67
Hurricane Irma, 2017	90	7.32
9/11 Terrorist Attacks, 2001	75	6.10
Indian Ocean Earthquake and Tsunami, 2004	65	5.28
Fukushima/Great East Japan Earthquake and Tsunami, 2011	59	4.80
COVID-19	55	4.47
BP Deepwater Horizon Oil Spill, 2010	51	4.15

Table 3. Most Commonly Researched Disaster Events by SSEER Members.

WHAT IS THE DEMOGRAPHIC COMPOSITION OF THE SSEER RESEARCH WORKFORCE?

The **demographic composition of the hazards and disaster research workforce** has long been of interest to leaders within the field. One area of special concern is whether or not those studying disasters reflect the demographic characteristics of the populations and places being studied.

With this in mind, the SSEER survey ends with a series of questions regarding respondent age, years of experience, race, ethnicity, and gender identity.

In the 2020 Census, SSEER researchers ranged in age from 20 to 78 years. The average SSEER researcher is 41.45 years old and has 9.40 years of research experience in the hazards and disaster field. Almost one-fifth of SSEER respondents (N = 241; 19.59%) did not provide their age in the membership survey.

THE AVERAGE SSEER RESEARCHER HAS
JUST OVER 9 YEARS OF EXPERIENCE
IN THE HAZARDS AND DISASTER FIELD.

The SSEER survey prompts respondents to select which racial and ethnic categories best describe their identity. Most SSEER respondents identify as White (N = 707; 57.48%). Fewer SSEER members identify as Asian/Asian

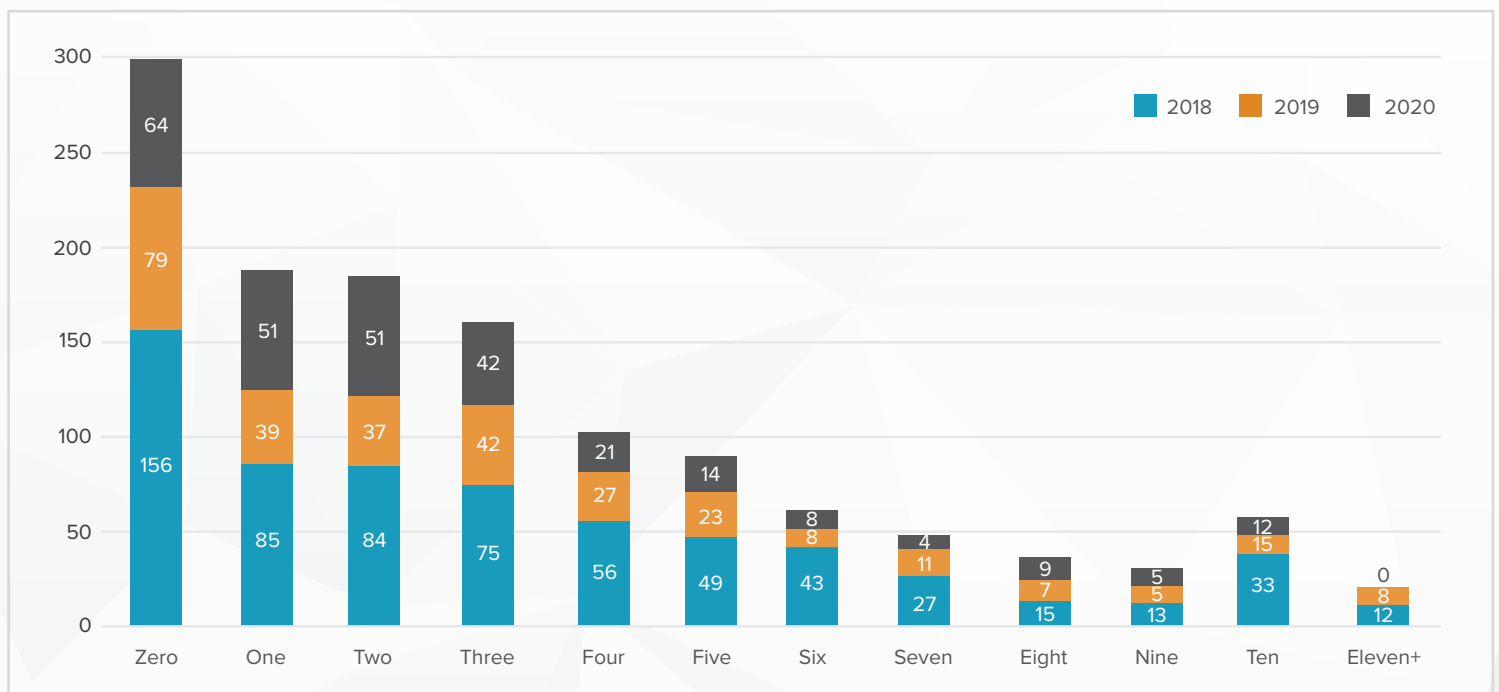


Figure 11. Number of Disaster Events Studied by SSEER Members, 2018-20.

American (N = 179; 14.55%), Hispanic/Latino (N = 83; 6.75%), or Black/African American (N = 69; 5.61%). A small percentage of respondents selected two or more racial or ethnic categories (N = 29; 2.36%) or some other provided identity option (N = 12; .98%) such as Indigenous, Native Hawaiian/Pacific Islander, or Arab/Arab American/Middle Eastern.

The survey also includes “prefer not to answer” and “prefer to self-describe” response options, in recognition that some respondents both inside and outside the United States may be uncomfortable with available fixed identity categories. A sizeable minority (N = 151; 12.28%) of SSEER respondents were coded as “missing” because they did not respond to the race/ethnicity question, chose “prefer not to answer,” or selected “prefer to self-describe” (see **Table 4**).

	2018		2019		2020		Total	
	N	%	N	%	N	%	N	%
White	400	61.73	169	56.15	138	49.11	707	57.48
Asian/Asian American	89	13.73	37	12.29	53	18.86	179	14.55
Hispanic/Latino	35	5.40	18	5.98	30	10.68	83	6.75
Black/African American	28	4.32	16	5.32	25	8.90	69	5.61
Two or more racial/ethnic identities	13	2.01	12	3.99	4	1.42	29	2.36
Some other provided racial/ethnic identity	4	0.62	3	1.00	5	1.78	12	0.98
Missing or a different identity	79	12.19	46	15.28	26	9.25	151	12.28
Total	648	100	301	100	281	100	1,230	100

Table 4. Racial/Ethnic Identity of SSEER Researchers, 2018-20.

More women (N = 653; 53.09%) than men (N = 512; 41.63%) have joined the SSEER network. Additionally, a small portion of members provided some other answer (N = 65; 5.28%), including refraining from responding or identifying as nonconforming/nonbinary. Responses regarding the gender identity of SSEER members for 2018 through 2020 appear in **Table 5**.

	2018		2019		2020		Total	
	N	%	N	%	N	%	N	%
Woman	340	52.47	152	50.50	161	57.30	653	53.09
Man	274	42.28	124	41.20	114	40.57	512	41.63
Some other answer	34	5.25	25	8.30	6	2.13	65	5.28
Total	648	100	301	100	281	100	1,230	100

Table 5. Gender Identity of SSEER Researchers, 2018-20.

CONCLUSION

This annual report on the status of the SSEER network has allowed us to characterize the location, demographic composition, disciplinary background, levels of involvement in the field, and other attributes among this dynamic research community. Since our first census release in 2018, the SSEER network has continued to grow and now includes a total of 1,230 researchers from 65 countries. SSEER members are predominantly located in the United States. As noted in the 2019 report, it is still not clear if there are actually more social scientists who study disasters in the United States, or if that is where we have been most successful at identifying researchers and encouraging them to join SSEER. Historically, there has been a relatively strong investment in social science research in the United States, but the predominance of members here may be more of a reflection of our reach as a U.S.-led network and the fact that the SSEER survey is currently only available in the English language.

Members of the SSEER network have studied a wide range of disaster types and events, although the most frequently studied disasters have all occurred in this century and in the U.S. and its territories. Indeed, the top five most studied disaster events in the SSEER database include Hurricanes Katrina, Harvey, Maria, Sandy, and Irma.

SSEER members use various social science and interdisciplinary methods and approaches to study natural hazards, technological hazards, and willful acts of violence. The research community is demographically diverse in terms of race, gender, age, and years of experience, although further analyses are warranted to understand more regarding the roles and activities of specific segments of the SSEER population.

We will continue to release the SSEER Census results annually via the [CONVERGE website](#) so that we can regularly assess the status of the social science hazards and disaster research field. We also update the interactive [SSEER map](#) quarterly; if you are a social scientist who studies extreme events and have not yet joined, you are invited to do so by completing the [SSEER membership survey](#).



RECOMMENDED CITATION

Champeau, Heather, Jessica Austin, and Lori Peek. 2022. “2020 Social Science Extreme Events Research (SSEER) Census,” in Social Science Extreme Events Research (SSEER) Network Data, Survey Instrument, and Annual Census. DesignSafe-CI. <https://doi.org/10.17603/ds2-v0xj-gw06>.

FURTHER WORK

For further information regarding the SSEER network, please see the following publications and reports:

Peek, Lori. 2018. “A Call to Social Scientists.” Director’s Corner, August 28. Boulder, CO: Natural Hazards Center, University of Colorado Boulder, <https://hazards.colorado.edu/news/director/a-call-to-social-scientists>.

Peek, Lori, Heather Champeau, Jessica Austin, Mason Mathews, and Haorui Wu. 2020. “What Methods Do Social Scientists Use to Study Disasters? An Analysis of the Social Science Extreme Events Research (SSEER) Network.” *American Behavioral Scientist* 64(8): 1066-1094, <https://doi.org/10.1177/0002764220938105>.

Peek, Lori, Jennifer Tobin, Rachel M. Adams, Haorui Wu, and Mason Clay Mathews. 2020. “A Framework for Convergence Research in the Hazards and Disaster Field: The Natural Hazards Engineering Research Infrastructure CONVERGE Facility.” *Frontiers in Built Environment* 6, <https://www.frontiersin.org/articles/10.3389/fbuil.2020.00110/full>.

Peek, Lori, Heather Champeau, and Jessica Austin. 2022. “2019 Social Science Extreme Events Research (SSEER) Census,” in Social Science Extreme Events Research (SSEER) Network Data, Survey Instrument, and Annual Census. DesignSafe-CI. <https://doi.org/10.17603/ds2-t0k5-3v04>.

Peek, Lori, Haorui Wu, Mason Mathews, Heather Champeau, and Jessica Austin. 2021. “2018 Social Science Extreme Events Research (SSEER) Census,” in Social Science Extreme Events Research (SSEER) Network Data, Survey Instrument, and Annual Census. DesignSafe-CI. <https://doi.org/10.17603/ds2-0f0q-vz13>.

DATA

The data used in this census report are available at:

Peek, Lori, Jessica Austin, and Heather Champeau. 2022. “2020 Social Science Extreme Events Research (SSEER) Network,” in Social Science Extreme Events Research (SSEER) Network Data, Survey Instrument, and Annual Census. DesignSafe-CI. <https://doi.org/10.17603/ds2-arw3-9z86>.

Peek, Lori, Mason Mathews, Jessica Austin, and Heather Champeau. 2022. “2019 Social Science Extreme Events Research (SSEER) Network,” in Social Science Extreme Events Research (SSEER) Network Data, Survey Instrument, and Annual Census. DesignSafe-CI. <https://doi.org/10.17603/ds2-tkix-rf45>.

Peek, Lori, Mason Mathews, Emmanuelle Hines, Haorui Wu, Jessica Austin, and Heather Champeau. 2022. “2018 Social Science Extreme Events Research (SSEER) Network,” in Social Science Extreme Events Research (SSEER) Network Data, Survey Instrument, and Annual Census. DesignSafe-CI. <https://doi.org/10.17603/ds2-2qc4-fh48>.

ABOUT SSEER

The **Social Science Extreme Events Research—SSEER—network** identifies and maps social scientists involved in hazards and disaster research in order to highlight their expertise and connect social science researchers to one another, to interdisciplinary teams, and to communities at risk to hazards and affected by disasters. The goals of SSEER are to amplify the contributions of social scientists, to advance the field through expanding the available social science evidence base, and to enhance collective well-being.

SSEER is part of a larger ecosystem of **National Science Foundation-funded extreme events research and reconnaissance networks** designed to help coordinate disciplinary communities in engineering and the sciences, while also encouraging cross-disciplinary information sharing and interdisciplinary integration. More information on SSEER and the other networks is available on the **CONVERGE website**.



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