

**COURSE SYLLABUS**

---

Instructor:	Dr. Kevin Ash	Term:	Spring 2021
Office:	TUR 3128	Class Meeting Days:	MWF
Phone:	352-294-6956	Class Meeting Hours:	10:40 – 11:30 am
Email:	kash78@ufl.edu	Class Location:	TUR 3006 & Online
Office Hours:	Mon, Tues, & Wed, 2-3 pm, or by appointment	Course Credits:	3 hours

---

**I. Course Overview**

Weather and climate-related disasters do not impact all sectors of society equally in the United States. To some degree this is due to local and regional variations in frequencies and magnitudes of these hazards. However, geographic differences in exposure to weather and climate hazards fail to fully explain why disparities exist among places and groups of people affected by disasters. Social vulnerability is a critical concept that helps us understand how and why some people and places suffer deeper and longer lasting impacts. This course will explore the association between social attributes (e.g., gender, age, disability, class, race, ethnicity, housing tenure, sexual orientation) and specific needs and disaster outcomes in disaster preparedness, response, recovery, and mitigation. The concepts of risk, vulnerability, intersectionality, community, resilience, and sustainability will be used as analytical tools to better understand the short- and long-term impacts of weather and climate-related disasters on vulnerable populations. Special attention is given to challenges of evacuation, sheltering, reconstruction, infrastructure repair, and community capacity building with the aim of fostering cultural competency and social responsibility to understand the disaster-related constraints and opportunities facing diverse communities in the United States and identifying potential strategies to enhance societal resilience for future events. The course will also highlight geographic patterns in the United States of diverse sociodemographic groups and how they overlap spatially at national, regional, and local scales, introducing students to mapping and geospatial analysis methods and data sources used in the social and behavioral sciences.

NOTE: This course is co-listed as GEO4938—an undergraduate course—and GEO6938 which is a graduate course. While the two courses will meet together and complete similar assignments and exams, undergraduate and graduate students will be evaluated based on different criteria. Graduate students will be required to lead and contribute more to in-class discussions, complete a longer and more rigorous final project paper, deliver a longer and more comprehensive final project presentation, and graduate students will be required to answer more difficult questions on the exams. More details are provided in section VI below.

**II. Student Learning Outcomes**

At the end of this course, students will be expected to achieve the following learning outcomes in content, communication, and critical thinking:

- **Content:** *Students demonstrate competence in the terminology, concepts, theories, and methodologies used within the subject area.* Students will acquire basic knowledge of how weather and climate hazards interact with longstanding social, cultural, and economic processes to generate inequities in how particular places and groups of people experience and recover from disasters. Students will also enhance their understanding of how capacity building and resilience initiatives provide opportunities to lessen or eliminate risk for vulnerable groups and places. The course will also emphasize the importance of place, location, geographic scale, and historical context to understand and counteract social vulnerability. Achievement of this learning outcome will be assessed through

thirteen written synthesis essays and corresponding in-class reading discussion periods, four assignments, a final project, and two exams.

- **Communication:** *Students clearly and effectively communicate knowledge, ideas, and reasoning in written or oral forms appropriate to the subject area.* Students will individually prepare written synthesis essays and then participate in class discussions during portions of thirteen class periods. The written syntheses and discussion participation will be assessed according to the rubric provided in the syllabus. Additionally, students will practice effective written communication as part of all four assignments. They will also prepare a 2500 word project paper and give a presentation of their findings to the class. The assignments will also include group interactions in which students will communicate their findings orally and visually to classmates. Achievement of this learning outcome will be assessed through thirteen written synthesis essays and corresponding in-class reading discussion periods, four assignments, a final project, and two exams.
- **Critical Thinking:** *Students carefully and logically analyze information from multiple perspectives and develop reasoned solutions to problems within the subject area.* Students will analyze data and information and will be asked to think critically and critique course reading materials and empirical data in the synthesis essays and assignments to develop potential solutions for individuals and institutions to reduce disaster impacts for vulnerable groups. In addition, in-class discussion periods will require students to build cultural competency by experiencing weather and climate disasters from the perspectives of vulnerable groups who face an array of challenges in daily life even without added stress that accompanies disasters. Achievement of this learning outcome will be assessed through thirteen written summaries and related in-class discussion periods, as well as all four assignments and the final project.

### III. **Materials and Supplies: Laptop Computer**

This course will be held partially in TUR 3006, which is a classroom with limited computer terminals; it will also be held virtually due to the ongoing COVID-19 pandemic. Students should provide their own laptop computer on which to work on assignments and quizzes during and/or outside of class. Any required software (such as Microsoft Excel) will be available on students' laptops through UF Apps at <https://info.apps.ufl.edu>.

### IV. **Required Texts and Useful Online Resources**

The required readings will be available via UF Canvas, and a list of articles is provided at the end of this syllabus. The structure of the course and a portion of the lecture material will be based upon the book *Social Vulnerability to Disasters, 2<sup>nd</sup> Edition*, published in 2013 by CRC Press, and edited by Deborah S.K. Thomas, Brenda D. Phillips, William E. Lovekamp, & Alice Fothergill. Students are not required to buy this textbook, but for those who wish to obtain a copy of the book, it may be purchased via these links:

<https://www.crcpress.com/Social-Vulnerability-to-Disasters/Thomas-Phillips-Lovekamp-Fothergill/p/book/9781466516373>  
<https://www.amazon.com/Social-Vulnerability-Disasters-Deborah-Thomas/dp/1466516372>

### V. **Course Format, Activities, and Basis for Evaluation**

The class will meet three times per week for lectures, in-depth discussions, assignments, & group activities. By the typical schedule, Mondays will consist of lecture, Wednesdays will be dedicated to finishing up lecture material and working on course assignments and projects, and Fridays will be dedicated to discussion of weekly readings. The instructor will provide guidance and show examples to assist the students as need with their assignments and final projects.

#### **Evaluation and Grading for Undergraduates (GEO4938):**

**Class Participation:** Class participation will be evaluated based on two components. The first is attendance which will count for 5% of the final grade. Students are expected to attend lecture periods and participate in discussions and group activities during the semester. Students may be excused from absences with appropriate documentation according to the university policy (more information provided in Section XIII below). The other 15% of class participation will be discussion of the weekly readings on Canvas and in class. Students will be required to post their own summaries and personal reflections on the papers and discuss the papers further during class periods. An evaluation rubric is provided below.

*Rubric for Evaluation: Online Readings Synthesis/Reflection*

*Task: Write a 300-500 word synthesis and personal reflection of the weekly assigned readings and submit it via Canvas prior to class. Consult the rubric below to make sure you include all required elements to receive full credit.*

*(Adapted from two sources: Solan & Linardopoulos 2011, [http://jolt.merlot.org/vol7no4/linardopoulos\\_1211.htm](http://jolt.merlot.org/vol7no4/linardopoulos_1211.htm); Reflection/Discussion Critique Rubric, <http://www.rcampus.com/rubricshowc.cfm?sp=yes&code=D97AAC&>.)*

<b>Evaluation Category</b>	<b>Standards for Excellent Work</b>	<b>Points</b>	<b>Instructor Comments</b>
<b>Evaluation &amp; Synthesis of Key Concepts</b>	<ul style="list-style-type: none"> <li>-Construct generalized judgments and/or arguments about key concepts in readings</li> <li>-Support arguments using specific instances or examples from the readings</li> </ul>	/6	
<b>Critique Strategies</b>	<ul style="list-style-type: none"> <li>-Employ one or more critique strategies such as:                             <ul style="list-style-type: none"> <li>▪ Compare/contrast between readings</li> <li>▪ Deconstruction of language or logic</li> </ul> </li> <li>-Identification of methodological shortcomings</li> </ul>	/4	
<b>Personal Reflection</b>	<ul style="list-style-type: none"> <li>-Discuss what student learned and how their perspective changed</li> <li>-Demonstrate cultural competency by adopting perspectives of diverse groups in relation to disasters</li> <li>-Identification of potential avenues for social change</li> </ul>	/6	
<b>Writing &amp; Communication Proficiency</b>	<ul style="list-style-type: none"> <li>-Organize writing with clear structure:                             <ul style="list-style-type: none"> <li>▪ Introduction</li> <li>▪ Body</li> <li>▪ Conclusion</li> </ul> </li> <li>-Avoid spelling, grammar, syntax, punctuation, or other writing errors</li> </ul>	/4	

**Assignments:** Students will complete four assignments during this course, which in total will comprise 30% of the final grade. These assignments will engage students in four activities designed to build their understanding of societal vulnerabilities in relation to weather and climate hazards, including through discussion and independent research about key vulnerability researchers and past events, in addition to working with data from the US Census Bureau. The assignments must be completed individually by each student.

**Final Project:** For the final project, students will choose a specific historical weather or climate-related disaster event and research how social vulnerability resulted in negative impacts associated with that particular event in the United States.

Students will also research ways in which individuals and communities counteracted social vulnerability by building capacities for resilience in the context of the relevant event. Students will research historical and contemporary events and social processes, as well as look to the future to anticipate challenges that may arise due to socio-demographic changes as well as climate change in the United States. The final project paper should be about 2500 words in length and include citations, data tables, and maps and graphs as appropriate. The project will be worth 10% of the total grade. The majority of the points will be related to the paper which each student will write and turn in by April 27<sup>th</sup>. The remaining 2 percentage points will be for a 5-7 minute presentation given the last week of classes. More detailed instructions about the final project will be provided to students via Canvas and in class.

**Exams:** In total, the two exams will account for 20% of the final grade, 10% each for the Midterm and Final exams. The exams will consist of a mix of short and medium length essay questions.

Assignments and Exams	Percent of Final Grade
Reading Essays & Discussion	35%
Assignments	35%
Final Project Paper & Presentation	10%
Exam #1: Midterm	10%
Exam #2: Final (not cumulative)	10%

Grading Scale (%)	
92.5 – 100	A
89.5 – 92.4	A-
86.5 – 89.4	B+
82.5 – 86.4	B
79.5 – 82.4	B-
76.5 – 79.4	C+
72.5 – 76.4	C
69.5 – 72.5	C-
66.5 – 69.4	D+
62.5 – 66.4	D
59.5 – 62.4	D-
< 59.5	E

VI. **Important Dates to Remember:** The due dates below are tentative and can be changed at the discretion of the instructor.

Drop/Add Ends:	Mon, Jan 11 <sup>th</sup> 2021
No Class, MLK Day*	Mon, Jan 18 <sup>th</sup> 2021
<b>Midterm Exam</b>	<b>Wed, Mar 3<sup>rd</sup> 2021</b>
Reading Days	Thurs-Fri, Apr 22 <sup>nd</sup> -23 <sup>rd</sup> 2021
<b>Final Project Due</b>	<b>Tues, Apr 27<sup>th</sup> 2021</b>
<b>Final Exam</b>	<b>Thurs, Apr 29<sup>th</sup> 2021</b>
Spring 2021 Grades Visible on <a href="https://one.uf.edu/dashboard/">https://one.uf.edu/dashboard/</a>	Wed, May 5 <sup>th</sup> 2021

VII. **Weekly Topic Schedule, Assignments, and Exams (Schedule is provisional and subject to change)**

Dates	Days	Weekly Class Topics	Weekly Assessments	Weekly Required Readings
Jan 11-15	MWF	Course Introduction; Geography of Weather & Climate Hazards in the USA	Reading Reflection & Discussion	Gall et al. 2011; Smith 2020
Jan 18-22	WF	What is Social Vulnerability?	Reading Reflection & Discussion; Begin Assignment #1	Cutter 1996; Wisner 2016

Jan 25-29	MWF	Socially Vulnerable Groups: Class & Poverty	Reading Reflection & Discussion;	Walters & Gaillard 2014; Vickery 2018
Feb 1-5	MWF	Socially Vulnerable Groups: Race & Ethnicity	Reading Reflection & Discussion; Assignment #1 Due	Adeola & Picou 2017; Flores et al. 2020
Feb 8-12	MWF	Socially Vulnerable Groups: Gender	Reading Reflection & Discussion; Begin Assignment #2	Gaillard et al. 2017; Tyler & Fairbrother 2018; Villarreal & Meyer 2020
Feb 15-19	MWF	Socially Vulnerable Groups: Age	Reading Reflection & Discussion	Meyer 2017; Peek et al. 2018
Feb 22-26	MWF	Socially Vulnerable Groups: Disability & Health	Reading Reflection & Discussion; Assignment #2 Due; Begin Assignment #3	Stough et al. 2016; Morris et al. 2018
Mar 1-5	MWF	<b>Midterm Exam</b>		None
Mar 8-12	MWF	Socially Vulnerable Groups: Language & Literacy	Reading Reflection & Discussion; Assignment #3 Due; Begin Assignment #4	Arlikatti et al. 2014; O'Brien et al. 2018
Mar 15-19	MWF	Socially Vulnerable Groups: Households & Families	Reading Reflection & Discussion	Tobin-Gurley et al. 2010; Lee & Van Zandt 2019
Mar 22-26	MWF	Building Capacity & Resilience: Faith-Based Organizations	Reading Reflection & Discussion; Assignment #4 Due; Begin Final Project	Duval-Diop et al. 2010; Rivera 2018
Mar 29 - Apr 2	MWF	Building Capacity & Resilience: Animals	Reading Reflection & Discussion	Thompson et al. 2014; Farmer et al. 2016
Apr 5-9	MWF	Building Capacity & Resilience: Community Vulnerability Assessment & Mapping	Reading Reflection & Discussion	Morrow 1999; de Sherbinin et al. 2019
Apr 12-16	MWF	Building Capacity & Resilience: Social Change & Empowerment	Reading Reflection & Discussion	Lazrus et al. 2012; Thomas et al. 2019
Apr 19-21	MW	Final Project Presentations	Final Project Due Apr 27 <sup>th</sup>	None
Apr 29	R	<b>Final Exam, Thursday, April 29<sup>th</sup> 12:30 – 2:30 pm</b>		

### VIII. Course Policies: Attendance, Make-Ups, and Grades

**Attendance:** Students are expected to attend class on a regular basis. Absences can be excused with proper documentation according to university policy. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

**Late Work:** All assignments submitted after their respective deadlines will be assessed a penalty: ten percentage points if one day late, fifteen percentage points for 2-3 days late, and 30 percentage points for 4-7 days late. Assignments will not be accepted if overdue by more than seven days.

**Examination Policies and Reading Days:** Course policies are consistent with University policies on during-term exams, final exams, reading days, and make-up exams. Students must notify the instructor as soon as possible in case of absence during an exam and provide documentation as to the reason for the absence. If deemed an excused absence, the student will be permitted a reasonable amount of time to make up the missed exam. More details can be found at <https://catalog.ufl.edu/UGRD/academic-regulations/examination-policies-reading-days/>.

**Grade Dissemination:** You can access your scores at any time using the Grade function in Canvas. The instructor will post grades within about one week of the due date of each assignment and the mid-term exam.

**Grading Policies for Assigning Grade Points:** Information on current UF grading policies for assigning grade points may be found at <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

**Grades of "Incomplete":** The current university policy concerning incomplete grades will be followed in this course. An incomplete grade may be assigned at the discretion of the instructor as an interim grade for a course in which you have completed a major portion of the course with a passing grade, been unable to complete course requirements before the end of the term because of extenuating circumstances, and obtained agreement from the instructor and arranged for resolution of the incomplete grade. Instructors are not required to assign incomplete grades.

## IX. Course Policies: Technology and Media

**Email:** Each of you has a UF email address. It is vital that you maintain an active UF email account and that you **check it often**. This tentative syllabus is **subject to change**, and any changes will be transmitted to you via your UF email account and Canvas (see below). Students should email the instructor if they have questions about any of the lectures, readings, assignments, or exams. You should expect a response within about 24 hours during weekdays. On holidays or weekends, expect a response on the next business day. The instructor will reasonably expect similar time frames for responses to emails sent to students.

**Canvas:** Course materials such as lectures, readings, the syllabus, and assignment instructions will be available through Canvas (<https://elearning.ufl.edu>). You will also find all due dates and grades on Canvas. Students must activate their UF GatorLink account in order to use Canvas. If you need help learning how to perform various tasks related to this course or other courses that utilize Canvas, please consult the above webpage. You may also contact the UF Computing Help Desk at (352) 392-HELP(4357) or [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).

**Online Course Evaluation:** Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at [gatorevals.aa.ufl.edu/](http://gatorevals.aa.ufl.edu/). Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at [gatorevals.aa.ufl.edu/public-results/](http://gatorevals.aa.ufl.edu/public-results/).

**Recordings and Notes:** It is not permitted to sell notes or recordings from this class without written consent of the instructor. Nor are students permitted to disseminate recordings of the instructor lecturing or post copies of assignments or exams on the internet.

**Zoom Presence and Recorded Sessions:** Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

## X. Course Policies: Student Expectations

### **Disabilities Statement:**

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

**Academic Honesty & Conduct Policy:** UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code." On all work submitted for credit by students at the University of Florida, the following pledge is

either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor code ([sccr.dso.ufl.edu/process/student-conduct-code/](http://sccr.dso.ufl.edu/process/student-conduct-code/)) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

## XI. Campus Resources for Students:

### **Academic Resources**

*E-learning technical support:* Contact the [UF Computing Help Desk](#) at 352-392-4357 or via email at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).

*Career Connections Center:* Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services at [career.ufl.edu/](http://career.ufl.edu/).

*Library Support:* <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

*Teaching Center:* Broward Hall, 352-392-2010 or to make an appointment 352-392-6420. General study skills and tutoring. <http://teachingcenter.ufl.edu/>

*Writing Studio:* 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers. <http://writing.ufl.edu/writing-studio/>

*Student Complaints On-Campus:* [sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/](http://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/)

*On-Line Students Complaints:* [distance.ufl.edu/student-complaint-process/](http://distance.ufl.edu/student-complaint-process/)

### **Health and Wellness Resources**

*U Matter, We Care:* If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu), 352-392-1575, or visit [umatter.ufl.edu/](http://umatter.ufl.edu/) to refer or report a concern and a team member will reach out to the student in distress.

*Counseling and Wellness Center:* Visit <https://counseling.ufl.edu/> or call 352-392-1575 for information on crisis services as well as non-crisis services.

*Student Health Care Center:* Call 352-392-1161 for 24/7 information to help you find the care you need, or visit <https://shcc.ufl.edu/>.

*University Police Department:* Visit [police.ufl.edu/](http://police.ufl.edu/) or call 352-392-1111 (or 9-1-1 for emergencies).

*UF Health Shands Emergency Room / Trauma Center:* For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; [ufhealth.org/emergency-room-trauma-center](http://ufhealth.org/emergency-room-trauma-center).

## XII. Assigned Readings List:

Adeola, F.O., and J.S. Picou, 2017. Hurricane Katrina-linked environmental injustice: race, class, and place differentials in attitudes, *Disasters*, 41: 228-257.

Arlkatti, S., H.A. Taibah, and S.A. Andrew, 2014. How do you warn them if they speak only Spanish? Challenges for organizations in communicating risk to Colonias residents in Texas, USA, *Disaster Prevention and Management*, 23: 533-550.

Cutter, S.L., 1996. Vulnerability to environmental hazards, *Progress in Human Geography*, 20: 529-539.

De Sherbinin, A., A. Bukvic, G. Rohat, M. Gall, B. McCusker, B. Preston, A. Apotsos, C. Fish, S. Kienberger, P. Muhonda, O.

- Wilhelmi, D. Macharia, W. Shubert, R. Sliuzas, B. Tomaszewski, and S. Zhang, 2019. Climate vulnerability mapping: A systematic review and future prospects, *WIREs Climate Change*, 10:e600, 23 pp.
- Duval-Diop, D., A. Curtis, and A. Clark, 2010. Enhancing equity with public participatory GIS in hurricane rebuilding: faith based organizations, community mapping, and policy advocacy, *Community Development*, 41: 32-49.
- Farmer, A.K., S.E. DeYoung, and T. Wachtendorf, 2016. Pets and Evacuation: An Ongoing Challenge in Disasters, *Journal of Homeland Security and Emergency Management*, 13: 20160051.
- Flores, A.B., T.W. Collins, S.E. Grineski, and J. Chakraborty, 2020. Social vulnerability to Hurricane Harvey: Unmet needs and adverse event experiences in Greater Houston, Texas, *International Journal of Disaster Risk Reduction*, 46: 101521.
- Gaillard, J.C., A. Gorman-Murray, and M. Fordham, 2017. Sexual and gender minorities in disaster, *Gender, Place & Culture*, 24:18-26.
- Gall, M., K.A. Borden, C.T. Emrich, and S.L. Cutter, 2011. The Unsustainable Trend of Natural Hazard Losses in the United States, *Sustainability*, 3: 2157-2181.
- Lazrus, H., B.H. Morrow, R.E. Morss, and J.K. Lazo, 2012. Vulnerability beyond Stereotypes: Context and Agency in Hurricane Risk Communication, *Weather, Climate, and Society*, 4: 103-109.
- Lee, J.Y., and S. Van Zandt, 2019. Housing Tenure and Social Vulnerability to Disasters: A Review of the Evidence, *Journal of Planning Literature*, 34: 156-170.
- Meyer, M.A., 2017. Elderly Perceptions of Social Capital and Age-Related Disaster Vulnerability, *Disaster Medicine and Public Health Preparedness*
- Morris, Z.A., R.A. Hayward, and Y. Otero, 2018. The Political Determinants of Disaster Risk: Assessing the Unfolding Aftermath of Hurricane Maria for People with Disabilities in Puerto Rico, *Environmental Justice*, 11: 89-94.
- Morrow, B.H., 1999. Identifying and Mapping Community Vulnerability, *Disasters*, 23: 1-18.
- O'Brien, S., F. Federici, P. Cadwell, J. Marlowe, and B. Gerber, 2018. Language translation during disaster: A comparative analysis of five national approaches, *International Journal of Disaster Risk Reduction*, 31: 627-636.
- Peek, L., D.M. Abramson, R.S. Cox, A. Fothergill, and J. Tobin, 2018. Children and Disasters, in *Handbook of Disaster Research*, pgs 243-262.
- Rivera, J.D., 2018. Reliance on Faith-Based Organizations for Tangible Assistance in Times of Disaster: Exploring the Influence of Bonding Social Capital, *Sociological Spectrum*, 38: 39-50.
- Smith, A.B., 2020. 2010-2019: A landmark decade of U.S. billion-dollar weather and climate disasters, NOAA National Centers for Environmental Information, 1-14.
- Stough, L.M., A.N. Sharp, A. Resch, C. Decker, and N. Wilker, 2016. Barriers to the long-term recovery of individuals with disabilities following a disaster, *Disasters*, 40: 387-410.
- Thomas, D.S.K., I. Hyde, and M. Meyer, 2013. Measuring and Conveying Social Vulnerability, in *Social Vulnerability to Disasters*, 2<sup>nd</sup> edition, CRC Press, pgs 415-445.
- Thomas, K., R.D. Hardy, H. Lazrus, M. Mendez, B. Orlove, I. Rivera-Collazo, J.T. Roberts, M. Rockman, B.P. Warner, and R. Winthrop, 2019. Explaining differential vulnerability to climate change: A social science review, *WIREs Climate Change*, e565.



- Thompson, K., D. Every, S. Rainbird, V. Cornell, B. Smith, and J. Trigg, 2014. No Pet or Their Person Left Behind: Increasing the Disaster Resilience of Vulnerable Groups through Animal Attachment, Activities and Networks, *Animals*, 4: 214-240.
- Tobin-Gurley, J., L. Peek, and J. Loomis, 2010. Displaced Single Mothers in the Aftermath of Hurricane Katrina: Resource Needs and Resource Acquisition, *International Journal of Mass Emergencies and Disasters*, 170-206.
- Tyler, M., and P. Fairbrother, 2018. Gender, households, and decision-making for wildfire safety, *Disasters*, 42: 697-718.
- Vickery, J., 2018. Using an intersectional approach to advance understanding of homeless persons' vulnerability to disaster, *Environmental Sociology*, 4: 136-147.
- Villarreal, M., and M.A. Meyer, 2020. Women's experiences across disasters: a study of two towns in Texas, United States, *Disasters*, 44:285-306.
- Walters, V., and J.C. Gaillard, 2014. Disaster risk at the margins: Homelessness, vulnerability and hazards, *Habitat International*, 44:211-219.
- Wisner, B., 2016. Vulnerability as Concept, Model, Metric, and Tool, in *Oxford Research Encyclopedia, Natural Hazard Science*, Volume 1.