

Amplified Voices, Organized Ignorance, and Epistemic Justice: Examining the Impact of Community-Science Partnerships for Environmental Justice

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Abstract: Low-income communities and communities of color are at greater risk for natural disasters and face greater barriers to recovery than predominantly middle-class white communities. Environmental justice claims made by these communities frequently take place in a politically charged atmosphere against competing industrial economic demands. The experiential knowledge of those who live in communities at risk is often contested and downplayed against the claims of corporate and/or government experts. Here we use a community-engaged research approach to examine the impact of a community-science partnership that seeks to amplify the voices of a community impacted by repetitive flooding. The community-science partnership consists of environmental advocates, scientific experts, university partners, and community members. We document the ways in which the community-science partnership counteracts policymakers who favor economic development over disaster protection, but also faces county officials who engage in various tactics to maintain strategic ignorance and deflect scientific expertise it finds inconvenient to its economic priorities.

Keywords: Epistemic justice, strategic ignorance, flooding, disasters, African American settlement communities, community engaged research, environmental justice

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Introduction

In our technology-driven, modern, industrial society risks related to pollution, natural disasters, and climate change may be universal, but they are not evenly distributed (Beck, 1992; Bullard & Wright, 2012). Some groups of people face disproportionate levels of risk related to natural and environmental disasters, suffer greater harm when they occur, and face added barriers to recovery in their aftermath (Lukasiewicz, 2020; Tierney, 2019; Verchick, 2012). This is true in poor or lesser developed countries in the Global South, as well as predominantly BIPOC (Black, Indigenous, People of Color) areas of the Global North (Sultana, 2022). Elevated environmental risk for communities of color is the result of co-occurring political, economic, and structural factors including historical and ongoing discrimination, segregation, and political disenfranchisement (Bullard, 2008; Mascarenhas, 2020; Pellow, 2017). These same factors hinder meaningful participation in policy making and political processes that might serve to protect vulnerable communities (Allen, 2007; Ottinger, 2013).

In addition to legacies of racial oppression, reliance on and access to technological expertise can also exclude communities at risk of environmental harm from participating in decision making processes. Without scientific data to back their claims, at-risk publics face a disadvantage in discussions about environmental risk—even when those risks impact them directly (Barber & Haney, 2015; Brown, 2007). Because experiential knowledge carries less weight than scientific knowledge, community members may face a “credibility deficit” when seeking redress (Bhakuni & Abimbola, 2021; Ottinger, 2023). One remedy to this is community-science partnerships in which scientific experts work with communities to independently gather data on environmental risk (Beck, 1992; Brown, 2007; Carr, 2004; Carrera et al., 2019; Fischer, 2005; Kimura & Kinchy, 2019; Ottinger, 2009). As these types of partnerships proliferate, it is useful to investigate how community-science partnerships can influence the process and outcomes of environmental justice struggles.

In this article, we examine the impact of a community-science partnership active in a rural, African American community in South Carolina. The Marinaville community (pseudonyms are used to protect the confidentiality of participants) experienced five significant flood events in the last seven years and remains disappointed in county efforts to mitigate flooding or support community recovery. In 2021, community leaders established a partnership with scientific, legal, and policy experts from several regional universities and environmental organizations to examine the causes and consequences of flooding and bolster community advocacy. Our institutional ethnographic account uses data from interviews, participant observation, and documentary evidence to examine 1) the ways in which the actions of the partnership are shaped by complex relationships with governing bodies, institutions, and policies; and 2) how the scientific and advocacy efforts of the partnership amplify the community’s environmental justice claims. Results indicate the partnership has been successful in drawing attention to Marinaville’s flooding issues, leading to increased interaction between the community and county agencies. However, even in the face of testimony from scientific experts and environmental organizations,

governing bodies use strategic ignorance to minimize community concerns and constrain the efficacy of community advocacy.

Background

Environmental justice struggles occur against a backdrop of scientization and neoliberalism. Scientization refers to the ways in which scientific data and technological expertise are valued over experiential or other ways of knowing, which creates tension over how data is collected, who is included in scientific processes, and how scientific results are mobilized (Beck, 1992; Cordner & Brown, 2021). While giving the appearance of objectivity, scientization functions to diminish community concerns and override public experiential knowledge related to risk and harm (Backstrand, 2004; Cordner & Brown, 2021; Jasanoff, 2003). Neoliberal ideologies also reinforce barriers to meaningful public engagement by shifting resources away from state agencies, weakening regulatory powers, and undermining mechanisms by which the public may find redress to environmental harm (Carrera et al., 2019). Together, neoliberalism and scientization minimize accountability for those who cause environmental harm, individualize the negative outcomes of poor government oversight, and dilute public resistance to corporate or government entities that put communities at risk (Frickel et al., 2010; Kinchy et al., 2014; Moore et al., 2011; Ottinger, 2013).

In this framework, some populations are more likely to be considered “credible knowers” than others, and therefore have their claims taken seriously by regulatory bodies. Those attributed lower credibility as knowers often find their concerns dismissed. Miranda Fricker’s (2007) concept of “epistemic injustice” astutely captures how community ways of knowing are derided and excluded from official testimony. When epistemic injustice occurs, marginalized groups find themselves “systematically afforded less credibility and their interpretive (or sensemaking) resources are not recognized” (Bhakuni & Abimbola, 2021, p. E1465). Community-science partnerships center communities in the scientific process, weave local experiential knowledge into established scientific methods, and address epistemic injustices by making data-driven debates more inclusive (Brown, 2007; Carr, 2004; Corburn, 2005; Kimura & Kinchy, 2019; Ottinger, 2023). Many community-science partnerships demonstrate success in drawing attention to community concerns; yet challenges remain when it comes to achieving systemic change (Carrera et al., 2019; Clark, 2020; McCauley, 2017).

Risk, Environmental Justice, and the Politics of Knowing

Not only are low-income and BIPOC communities more vulnerable to natural and industrial environmental disasters, they typically experience greater difficulty recovering from the impact of disasters, as well as barriers to implementing plans and procedures that would protect them from future events (Allen, 2007; Bullard & Wright, 2012; Frickel & Vincent, 2011; Tierney 2019). Residents of disaster-vulnerable communities frequently exhibit deep experiential knowledge and understanding of the causes and consequences of their vulnerability, but their

marginalized status diminishes the chance their knowledge will be taken seriously and acted upon by authorities (Ottinger, 2023). When they aren't taken seriously, communities are denied resources to support recovery and resilience efforts. In addition to authorities' reluctance to accept marginalized communities' experiential knowledge of the conditions they face, in some cases the community's vulnerability itself functions to uphold advantages for dominant social groups (Freudenberg et al., 2009; Gotham & Greenberg, 2014; Tierney, 2014).

The aftermath of Hurricane Katrina painfully highlights the connection between disaster risk and environmental justice. Decades of post-Katrina disaster research and theoretical development demonstrate several key points: 1) so-called "natural" disasters are rooted in man-made causes; 2) disaster risk and recovery are complicated by pre-existing conditions of inequality; and 3) communities of color, especially low-income communities of color, face the highest risk of disaster and the greatest obstacles to recovery as a result of historical and ongoing practices such as redlining and political marginalization (Allen, 2007; Anderson, 2008; Arcaya et al., 2020; Bullard, 2008; Bullard & Wright, 2012; Freudenberg et al., 2008; Garcia-Lopez, 2018; Knowles, 2014; Woodhouse, 2011). As sites of environmental inequality, disasters echo the potential for epistemic injustice that exists within broader struggles for environmental justice.

In addition to denying a community's experiential knowledge of risk, government agencies and corporations may also work to maintain "plausible deniability" of risk through socially organized ignorance. Disaster risk is embedded in the "culmination of the long evolution of knowledge in technical realms" (Knowles, 2014, p. 229) and wedded to political and economic decisions about the ways in which science and technology are mobilized (Bullard, 2008; Kimura & Kinchy, 2019; Knowles, 2014; Woodhouse, 2011). Therefore, conversations about which communities are most at risk of disaster, who is most deserving of aid in the aftermath, and where resources are allocated for recovery frequently involve "disputes over local vs cosmopolitan knowledge and questions about whose science and whose knowledge 'counts'" (Allen, 2007, p. 153). Knowledge disputes almost uniformly favor the technical expertise of government and/or industry scientists who produce "known" values related to risk, which, in turn, open pathways for authorities to "[engage in] strategic ignorance, the mobilization of unknowns in a situation in order to command resources, deny liability in the aftermath of disaster, and assert expert control" (McGoey, 2012, p. 555). Maintaining "plausible deniability" through the appearance of ignorance or unknowing about disaster risk allows both government institutions and private sector entities to evade criticism, litigation, or other consequences stemming from disaster events.

In environmental disputes in particular, ignorance and uncertainty become "resources that are leveraged strategically to increase ambiguity, cause controversy, and/or delay action" (Birkenholtz & Simon, 2022, p. 155). Government institutions or corporations typically have some stake in proving (or denying) whether, how, or how much a community is (or is not) impacted by a particular defined risk or set of risks. Thus, community-science partnerships seeking to address epistemic injustice face a range of potential responses when working to amplify the voices of community members in a debate. Political leaders may use strategic

ignorance to resist regulatory action or policy enforcement that could protect at-risk communities but come at political or economic cost to them (Kleinman & Suryanarayanan, 2012; Richter et al., 2021). Counter-mobilizing data to dispute the results of community-science partnerships or calling into question the veracity of local knowledge claims is a key strategy used to maintain strategic ignorance (McGoey, 2012; Rayner, 2012).

Despite these challenges, research on the efficacy of community-science partnerships suggests “activist and other public groups play vital if often unrecognized roles in shaping decisions about what will be known and what will remain unknown” (Frickel & Vincent, 2007, p. 25). Some of the most successful partnerships involve inclusive alliances “between local citizens and expert activists, across lines of race and class, and between local and national organizations” (Allen, 2003, p. 2). Yet what constitutes “success” in environmental justice cases can be complicated when powerful corporate and government entities set the terms of play and dominate the playing field (Ottinger, 2013). Faced with an active public which seeks redress, entities that benefit economically and/or politically from practices which cause harm are incentivized to downplay or outright deny claims made by aggrieved community members (Oreskes & Conway, 2010). Because defining environmental risk remains a site in which powerful entities tussle over whether to illuminate community knowledge claims or obscure them, community-science partnerships are a strategy which allows marginalized communities to enter into a debate from which they might otherwise be excluded.

Here, we analyze the increased flood risk of the Marinaville community and the role the Marinaville Community Partnership plays in community advocacy efforts. As a low-income, majority Black community whose risk factors for flooding are related, at least in part, to historical and ongoing marginalization, Marinaville fits an environmental justice framework. Residents of Marinaville have experiential knowledge linking increased flooding in their community with rapid development throughout the county, but this information is disregarded by county officials. In response, Marinaville residents form a community-science partnership with regional universities and environmental organizations in a strategic move to gather data about flooding and support community advocacy. In this paper, we examine how the actions of this partnership are shaped by complex relationships with governing bodies, institutions, and policies; and whether scientific and advocacy efforts of the partnership address Marinaville’s environmental and epistemic justice concerns.

Methods

Our analysis in this paper relies on ethnographic data collected from 2021-2024, including semi-structured, in-depth interviews with 25 participants who are part of the Marinaville Community Partnership (MCP); informal, conversational interviews with Marinaville residents at community meetings; participant observation at community events and county meetings; and text-based or documentary sources such as newspaper articles, county meeting agendas, zoning policies, etc. Additional observations were made at MCP meetings and events, county council proceedings, county committee meetings (e.g. Infrastructure and Regulation, Planning & Zoning), public

hearings related to proposed development, as well as meetings and events planned by local advocacy organizations and the Association of Marinaville Residents. Interviews, observations, and textual data reveal a complex set of networks at play which necessitate the advocacy of the MCP but also constrain its efforts.

In-depth interview participants include six community members, ten employees of environmental non-profit organizations, four university affiliates with expertise in the natural sciences, and six university affiliates with expertise in the humanities or social sciences. There is some overlap in these roles as several environmental advocates also have advanced scientific degrees; three participants fit this category. Participant background and expertise will be noted when quoted in the analysis. In-depth interview participants were aged from late 20s to 60s. There were thirteen women and twelve men participants in the semi-structured interviews. Seventeen participants are white, seven are Black (five community partners, one environmental organization partner, and one university partner), and one is Native American (environmental organization partner). The MCP is a regional collaboration so six participants were located two to four hours away from Marinaville, and nineteen lived and/or worked within a forty-five-minute drive or less. Because of the contentious nature of county politics, the name of the community has been obscured and individual participants given pseudonyms.

The primary analytical method used in this paper is Institutional Ethnography (IE). The goal of IE analysis is to illuminate the “standpoint” of research participants. Through this standpoint, we explore the “local sites of people’s experience, [and make] visible how [they] are connected into the extended social relations of ruling” (Smith, 2005, p. 325). It is typical for interviews, participant observations, and texts to form the basis of IE. Each of these analytical sites expose layers of “ruling relations,” that is, “translocal forms of social organization and social relations” which coordinate and manage the actions taken by individuals in their everyday/everynight lives (Smith, 2005, p. 218). IE emphasizes that knowledge and action are textually mediated and “makes visible just how activities in local settings are coordinated and managed extralocally” (DeVault, 2006, p. 295). In this case, we use IE to examine the ways in which ruling relations, institutions, and texts coordinate the local activities and strategies of the MCP.

To illuminate the standpoint of participants in the MCP, interview questions focused on the role of each person in the MCP, the specific actions they take on for the MCP in that role, what they perceive as challenges faced by the MCP, and the ways in which they feel the MCP has been successful. During the coding process, special attention was paid to participants’ descriptions of their interactions with and within various external ruling relations, for example county or state regulatory agencies, legislative bodies, non-profit organizations, etc., as well the way in which specific texts, laws, regulations, and policies influenced the strategies and actions of MCP partners. Thus, IE creates a sort of “map” of these ruling relations. In doing so, the institutional ethnographic analysis makes ruling relations visible so that those who interact with a set of institutions may develop a more comprehensive view of how to work within the institution, or to change it. This mapping process makes visible the coordinating mechanisms that structure institutional discourses so that the actualities of the work undertaken by people who must

interact with the institution can be understood on a deeper level. Thus, IE's mapping of the extra-local coordination of local activity sheds light on the dimensions of power and justice at play in determining not only which knowledges are available to whom, but whose knowledge is afforded greater epistemic value in environmental disputes.

Results

Marinaville is located in a region of coastal South Carolina that has experienced massive growth over the last thirty years (USA Facts, 2022). Population growth fuels construction and real estate development as primary drivers of economic activity in the county, and these industries are politically influential. Much the county is low-lying wetlands, and several rivers drain through the county watershed on their way out to the Atlantic Ocean, making the county vulnerable to hurricanes and floods. Moreover, increased impervious surfaces from development have disrupted the natural protective function of local wetlands, making the impact of storms and flooding increasingly costly in recent years (South Carolina Office of Resilience, 2023). The last major hurricane and its associated flooding caused more than 2 billion dollars' worth of damage in South Carolina, with Marinaville one of the communities that was directly affected. Despite these vulnerabilities, county policy and regulations frequently favor new construction and residential development over flood prevention.

As with most natural disasters (Bullard & Wright, 2012; Tierney, 2019), low-income communities and communities of color feel the strongest impacts of storms and floods. Marinaville is an unincorporated community of about 750 people on the outskirts of a rapidly developing county. It is an African American Settlement Community rich in Gullah Geechee culture and populated largely by descendants of formerly enslaved people. The Marinaville community is on low-lying land near the confluence of two major rivers and has experienced flooding in the past. However, until recently flooding was infrequent, with decades passing between significant flood events. Now, between 2015 and 2023, five large scale floods have impacted the community. Several of these flood incidents received extensive media attention, including national and international coverage. Many residents struggle to rebuild after flooding because neither insurance policies (if they have them) nor government aid typically cover the full cost of recovery. This has contributed to population loss in Marinaville and fueled fears of displacement and gentrification.

In 2021, seeing reports of the Marinaville community flooding yet again, Shantae, director of a regional chapter of a larger, national environmental advocacy organization, contacted The Association of Marinaville Residents and asked if the community was receiving support from environmental groups. They were not. She then utilized her networks to build a collaboration of scientists, researchers, and advocates to address flooding in Marinaville. Formally titled the Marinaville Community Partnership (MCP), many of those involved simply refer to it as "the collaboration." The collaboration consists of scientific experts, university partners, and environmental advocates from the Southeast region, including Duke University, Furman University, Coastal Carolina University, Clemson University, American Rivers, the Coastal

Conservation League, South Carolina Environmental Law Project, the Southern Environmental Law Center, the Carolina Wetlands Association, the Gullah Geechee Chamber of Commerce, among others. Throughout this paper, regional organization names are real, while community and participant names are pseudonyms. Internal documents from the MCP's initial strategic planning show stated goals of the collaboration include addressing flooding, preserving cultural heritage, building awareness, and building advocacy and legal capacities.

In the present study, we draw on environmental justice and Science, Technology, and Society (STS) frameworks to develop an institutional ethnographic account that examines how the work of the MCP is socially organized. From an IE perspective, this means 1) examining the “ruling relations” that coordinate the actual doings of the MCP and the ways in which the collaboration works to meet its goals within a pre-existing structure of institutions, policies, and procedures; and 2) revealing the ways in which ruling relations often constrain MCP efforts to achieve epistemic and environmental justice in Marinaville. Findings indicate that the collaboration has been successful in bringing funding and other resources into the community, gathering data with community members, building awareness of environmental justice issues, and expanding advocacy efforts. For example, due in part to the efforts of the MCP, the Marinaville community's interests are better represented in county council proceedings. At the same time, county and state political structures, policies, and procedures often obscure data and testimony produced by the MCP, including that of scientific experts.

The work of the MCP: Negotiating Community, Politics, and Policy

Institutional ethnography (IE) focuses on how ruling relations shape the social organization of knowledge (Smith 2005). Here, we also examine the inverse by analyzing how ruling relations can function to socially organize ignorance. The IE perspective helps us understand how the work of the MCP is embedded in external social-political-economic, “ruling” relations that shape and constrain the actions and strategies of the collaboration. To do this, IE focuses not just on what people know, but what people actually *do*. IE researchers use the term “work” in a broad sense to mean “an action by an actual person that takes time, energy, and intention” (Nichols et al., 2017, p.118) and that may or not be part of their paid employment. By focusing on peoples' actual doings in this way, IE stays rooted in the actualities of peoples' lives rather than abstracting from the experiences of people. In this section, we focus on the ruling relations external to Marinaville and the MCP, and how the MCP engages with these structures.

When describing the work of the MCP, participants focus on the current and historical marginalization of the Marinaville community and what the MCP does to address the epistemic injustice experienced by Marinaville residents. For example, Charlie grew up in Marinaville and still has strong familial ties in the area even though he currently lives about a ten-minute drive from the heart of the community. Charlie is an active participant with the MCP and describes the work of the collaboration as “[an] honest and profound effort to get something done, because I feel the community has been neglected for years and we want to see some change.” Similarly, Sara, an academic partner in the MCP with advanced degrees in ecology and biology,

acknowledges epistemic injustice when she says, “[The county] is not listening to the community and they’re going to do whatever they want no matter how it impacts the community.” She also describes MCP actions that facilitate advocacy for Marinaville as “communication with the government and trying to figure out how all the development, along with all the natural things, are really impacting the community and what we can do to work together in a way that doesn’t push these communities out or destroy them.” Thus, both Charlie and Sara describe the role the MCP plays as allowing Marinaville’s voice to be heard and achieving protective action for Marinaville.

The extent to which protecting the community from flooding involves interacting with layers of ruling relations surfaces repeatedly throughout the interviews. Other university partners, like Beverly, a political scientist with expertise in sustainability, highlight the disadvantage Marinaville is in because “in unincorporated rural areas, there are no formal pathways except to go through your [county] council representative who oftentimes is not directly connected” to the community. Katie, a university partner with expertise in the humanities and cultural preservation, focuses on the work the MCP is doing so that Marinaville residents are “recognized in bureaucratic structures.” She explains this is important because “everything from Federal Emergency Management Agency disaster aid policies to local tax codes” can determine whether Marinaville residents will receive aid or be able protect their homes. If Marinaville residents are systematically shut out of formal pathways of representation and unrecognized in bureaucratic structures, then creating a pathway for inclusion becomes imperative. This is the type of MCP action that Jenny, a program coordinator with an environmental advocacy organization, emphasizes. She describes in detail the work she does to hook Marinaville residents into structures of ruling relations from which they have been historically marginalized,

One of the main things is making sure residents understand the processes for how decisions are made [and] the steps they can take to have a say in planning and legislation and anything like that. Before [my work in advocacy], I had never attended a planning commission meeting in my life! So, making sure that they [Marinaville residents] have that foundational knowledge to start with and, you know, connecting with communities so they can lay out the issues they're facing [and advocate for themselves] is important.

Jenny’s response highlights the dual actions of university and organizational partners in the MCP: first to listen to the community, and then work with the community to achieve its goals. These participants illustrate multiple ways that Marinaville residents have been epistemically isolated from political and bureaucratic structures, and actions the MCP is taking to change this.

When considering the work of the MCP, collaborators remained conscious of Marinaville’s experience as a historically marginalized community and considered this deeply connected to the actions of the MCP. As a result, participants emphasize the importance of centering community voices and then leveraging the expertise of university and organizational partners to bring

attention to residents' concerns. In addition, when reflecting on their work with the MCP, collaborators found themselves embedded in external ruling relations that frequently frustrated their efforts to advocate for the community.

Epistemic Justice

Starting from the standpoint of the Marinaville Community Partnership reveals the collaboration's work to address epistemic injustices faced by the Marinaville community. While the actions of the MCP are multifaceted, the primary goal remains centering community voices and supporting priorities set forth by community members. Those in the MCP recognize that historical and current marginalization set the stage for the community's vulnerability to flooding, and that the experiential knowledge of Marinaville residents is dismissed. Community members are acutely aware of their position in relation to county politics. In formal interviews and informal conversations with Marinaville residents, county politics were frequently referred to as a "good old boys' system" where Marinaville "does not have a seat at the table."

Marinaville residents are deeply knowledgeable about the causes and consequences of flooding in their community, but their experiential knowledge is sidelined by the ruling relations of the local political apparatus. When the MCP was formed, a group of community members organized a tour for external MCP collaborators. During the tour, residents pointed out areas where flooding occurs now that didn't flood in the past. They connected these new flood events to land use changes in the community, like road and bridge construction. Calvin, then Chair of the Association of Marinaville Residents, describes flooding impacts like so,

We know that there are changes in our in our climate and weather patterns. There's also been a lot of changes in the topography of the Marinaville community. Once you get the development coming in and you start building large facilities that take up mass quantities of acreage [and] trees [are] being removed this creates the perfect storm for flooding. Marinaville [is] at the at the bottom of our watershed. So, even when there's significant rain in the upstate, we're in danger of flooding. And we have conditions within a low to moderate income community...that's compounded by flooding.

In addition to experiential knowledge of the changing frequency and location of flooding, community members have a holistic understanding of the interconnected consequences of flooding for the community. Shantae, a regional director with a national environmental advocacy organization, found the depth of community members' experiential knowledge remarkable,

[Community members connected] all of the issues that they were facing, including heirs' property issues, water quality issues, the fact that they were politically disenfranchised, population loss, economic issues, education issues, all kinds of things. All of these issues tied into the whole flooding issue.

However, this community knowledge is often dismissed by the county, reinforcing to MCP partners the need for additional scientific data. Many collaborators, like Jenny, believe if community experiential knowledge is supplemented by scientific data the community's concerns have a better chance of being addressed,

[The MCP can] help them to get heard more by the county. We can help them address the science component. That will make a difference, [or] it may not, depending on the powers that be, but it certainly can't hurt. It will certainly strengthen their voice.

Jack, a retired biologist who partners with the MCP, acknowledges community concerns and identifies the need to connect experiential knowledge with scientific data,

People started talking about how the [new] road redirected the water...and caused more flooding. You know, the whole area is low and flood prone anyhow [so] it's hard to determine exactly what the road did. [But I've] driven down that road. They built it back all the way from Marinaville down to the river [and] all the way over. So surely that's going to affect some flooding!

These quotations illustrate how the MCP works to weave together community knowledge with scientific expertise and advocacy to achieve epistemic justice for the community. Partners in the collaboration agree that Marinaville residents exhibit deep knowledge of the issues facing their community but need scientific data to have their knowledge claims taken seriously by county or state officials. Respondents frequently mentioned the work they do to center community knowledge, amplify community voices, and let the community lead in the collaboration.

Several collaboration partners also pointed out that wealthier, predominantly white communities in the area get attention and resources that Marinaville does not. Carrie, an organizational partner with an advanced degree in marine science, points out, "the fact that [Marinaville] is a low income, minority community [means] there's not as much of a voice as some other communities in the area that have a lot more money and a lot more people." Another participant, Chip, a university partner with advanced degrees in conservation ecology, describes Marinaville's struggle to be recognized and taken seriously,

[Marinaville residents] are doing a good job uniting and getting involved and making their voices heard. They've done what they can to try to rectify some [things]. But if we were having the same problems in [a wealthier, predominantly white community] it would be it would be a much different outcome.

Those in the MCP seek to balance its goals to address the epistemic injustice Marinaville faces as a low-income, majority-Black community without resorting to "white saviorism." It can be a delicate issue to ensure that the "expert" voices in the MCP do not commit their own epistemic

injustices against the community. University partner, Ebony, who has expertise in art and cultural preservation, explains it like this:

Certain groups, especially progressive groups, come in with this savior type of mentality. You can't save Marinaville. Marinaville has to save Marinaville. Instead, we say these are the tools that we have to do the thing that you [the community] said that you wanted to have done. I understand that some people can't articulate what it is that they want, but when we help them to articulate that, be clear that it's their articulation and not the collaboration.

Community members are acutely aware that the role a collaboration can play in epistemic justice can be double-edged but feel that the MCP has been successful in keeping the community voices at the center of what they do. Charlie points out that MCP partners

have the expertise in various fields to take it and run with it and make a successful investment. Not everybody [in the community] will be on board. Some people, like I say, are skeptical because, you see, things has happened in the past. But keep moving forward. You will make change occur.

Another community member, Calvin, describes MCP-community interactions this way:

[The MCP] always offered suggestions for direction, but it was never, you know, "if you're going to get my help, you're going to do it my way." You've always left this in the hands of the community. The community does not feel threatened when that's done. It really, to me, makes me more receptive of the things that you have to offer just the way you handle it by always saying it's community first, we just want to help you do what you think is best for your community.

Despite the apparent success of the MCP in connecting university and environmental professionals with community needs, achieving broader epistemic justice with legislative bodies and government agencies has been uneven. On one hand, MCP participants generally agreed that the collaboration was successful in getting more attention for the community and increased inclusion in county proceedings. According to Katie (university partner), "certainly Marinaville is now involved in the conversation. You know, the fact that there is, I feel, a greater communication line between county council and the Marinaville community [is a success]." Likewise, Shantae (organization partner) notes a shift in relations between the community and the county council,

We've done some advocacy work and I think the voices of residents have been raised to a different level in decision making, which is great. There's more work that can be done and that needs to be done. But, I mean, I did see a shift and at least a willingness to engage with the community.

However, having one's voice amplified and being listened to are not the same thing. Whether increased engagement with the county will lead to a demonstrable difference in the support and resources the county offers to the community remains to be seen. MCP partner Gary, a geographer with expertise in sustainability, observed, "In the last flood meeting [with county council] there were council people that were just like, 'This is the way things are going to be. Deal with it.'" Thus, having a seat at the table doesn't necessarily mean those seated around you will address your concerns. These kinds of interactions with council representatives or committee members undermine public trust. As Charlie notes, the MCP can help the community "put more pressure on [the county]," but he remains skeptical that "the information [the county is] giving to us is accurate." Success for the MCP and epistemic justice for Marinaville, ultimately depends on the county's willingness to engage openly, transparently, and in good faith with the community.

Organizing Strategic Ignorance

MCP advocacy has worked to increase attention from county officials, resulting in additional public hearings for Marinaville and greater inclusion in some aspects of county proceedings. However, ruling relations in the county function to cast doubt not only on the local experiential knowledge of Marinaville residents, but also the scientific expertise of MCP collaborators. Diminishing both the experiential knowledge and the scientific expertise of the MCP allows the county to maintain a veil of ignorance regarding flooding in Marinaville. Our analysis shows that county entities stymie MCP advocacy in several ways: shielding themselves from and/or blocking community access to information, discrediting MCP expertise, and appeasement. This socially organized ignorance allows the county to engage in business as usual, despite negative impacts to communities like Marinaville.

One way the county maintains socially organized ignorance related to the Marinaville community and MCP advocacy is by withholding information. John is a project manager with a regional environmental advocacy organization and holds an advanced degree in conservation biology. When he requested access to county plans to build a dam in Marinaville, the planning office responded that the plans were protected under trade secrets and a costly Freedom of Information Act (FOIA) request would be required for the plans to be released. He explains,

Working with and through the local government, you know, it's been a little bit frustrating. We ask for information that probably should be publicly available, but we have to go through these hurdles. In the end, the county was able to put together a [public] meeting and showcase those documents anyway [but] maybe if we had the time to review those documents and get that information out to the community and even to some of the [MCP] experts, maybe there wouldn't have been so much tension at the meeting and it would have felt a little bit more collaborative versus combative. But, you know, I think that's been one of the big challenges is just a lack of transparency [from the county].

Other MCP partners recount similar experiences when requesting information from county offices. For example, several years ago a small group of community members requested information about road construction near their homes. They were told a FOIA request would cost more than nine hundred dollars and take several months to process. These impediments serve a “cooling out” function that frustrates community members and discourages them from trying to access information in the future.

Beyond blocking outside access to information, the county also shields itself from community input. The public meeting referenced by John in the quote above was organized for the Marinaville community after the MCP successfully petitioned the county. Held at the local community center, nearly one hundred concerned residents attended the public hearing, anxious to learn more about proposed flood mitigation plans that involved building a dam on one end of Marinaville and a canal on the other. An engineering firm hired by the county presented maps and diagrams of the dam and canal project. One community member tried to ask a question and was silenced. Then, residents were directed to speak with the engineers and government agency representatives individually at tables set up in the room. Many attendees felt the format of meeting diffused community engagement. Sherry, associate director of the regional branch of a national environmental organization, describes her experience at the public meeting,

It's like they just came in and said this is what's going to happen, and there was no real dialogue that occurred. I mean, I asked a question that should have been allowed to be asked while everybody was still right there. Not this whole like, you know, dividing up people or, actually, it's more like they chased people out.

Whether or not it was the intention of county officials to stifle community interaction at the event, the format was ineffective in easing public concerns about the project. As folks filtered out of the community center, some remarked they were leaving the meeting with more questions than they had before. Subsequently, county officials began using community meetings to publicly blame MCP environmental organization partners for holding back flood mitigation projects like the dam. However, the MCP's only actions regarding the dam project were requesting plans and documents for transparency and organizing public meetings so community concerns could be addressed. MCP affiliates, in fact, issued a statement that they supported the dam but believed it should not be the only solution sought to address Marinaville's flooding, making a case that more community support and systemic mitigation measures were needed. These incidents illustrate ways in which the county shields itself from information about community concerns, blocks community access to information about county plans, and deflects blame onto environmental and community advocates.

Another strategy used by county officials to thwart the MCP's epistemic justice efforts is discrediting the scientific expertise of the collaboration. The primary imperative for a community-science partnership is that scientific experts help bolster communities' local experiential knowledge claims. However, MCP scientists and experts find their own expertise

challenged, discounted, or even mocked. In one instance, Jack, a retired university partner with expertise in biology, recounts a scenario that happened to another MCP partner,

He and all these people testify [to county council]. Later, apparently, he got a recording where county officials, they were at a retreat, and they were basically making fun of him and anybody else who was doing the testifying.

The person mocked at the council retreat holds an advanced degree in conservation biology with specific expertise related to the concerns raised in his testimony before the council. By discrediting scientific experts, ignoring the data they bring to the table, and deriding their concerns, government officials maintain ignorance regarding the impact of development and its relationship to flood risk and other environmental issues.

Most of the time, county officials are not caught on tape openly making fun of those who testify before them. More often in public and on the record, they use other tactics to manufacture doubt or discredit MCP advocacy efforts. When MCP partners testify in public meetings to oppose road projects or other developments that may increase risk of flooding in Marinaville, their expertise is frequently questioned or quickly brushed aside during the proceedings. For example, Amy, a university partner, testified with two other Marinaville residents during a county committee meeting. During the public input portion of the meeting, each speaker opposed funding for a new road to come through the Marinaville community during their allotted two minutes of speaking time. Speaking within the two-minute time limit, Amy made several points based, in part, on interviews with MCP experts regarding the causes and consequences of flooding in Marinaville. This is an excerpt of that testimony,

I've lived through several hurricanes here [in this county]. Evacuation has not been a hardship for many people. Flooding, on the other hand, has caused repeated hardship for many. The [proposed road], will not be a lifeline for Marinaville. It will make more people more vulnerable. As part of [my professional research expertise], I've interviewed hydrologists, biologists, marine scientists, ecologists, and forestry experts from Duke, Furman, Clemson, and Coastal Carolina Universities. There is a clear consensus that development throughout the watershed increases Marinaville's vulnerability to flooding. Ditches, dams, and ponds simply do not protect communities the same way undisturbed wetlands do.

After this testimony, a county official called Amy by the wrong name, misidentified her affiliation, and chided her for not providing sources during her two-minute testimony. There was no opportunity given for Amy to address the councilman's comments. Despite the testimony of Marinaville residents, all the committee members supported the proposal for funding the road. Finally, the council representative for the district in which Marinaville is situated convinced the committee to add a provision to the proposal that would acknowledge and protect the historical

significance of the Marinaville community. This is certainly a positive outcome, however, there was no discussion of how this provision might be enforced.

These events illuminate another strategy of socially organized ignorance, appeasement. One week after the committee voted to pass the funding proposal for the road with protective language for the Marinaville community, it came before the county council for a vote. There was nothing included in the meeting agenda about protecting Marinaville, and no discussion of Marinaville by council members during their deliberations. Marinaville residents and the MCP had been appeased by the offer to add protective language to the road funding proposal, but there is no evidence of such language in current documents. If it exists, how it will be enforced remains unknown. Thus, socially structured ignorance serves both to appease MCP advocates and keep them in a state of unknowing that serves political-economic ruling relations.

Several MCP partners were present to testify before county council regarding the road development. Each emphasized how expanding road development would increase flooding in Marinaville and other areas of the county. One of the MCP partners to testify was Tara, a university partner with an advanced degree in environmental studies. She testified regarding the role of wetlands in reducing flooding in Marinaville,

Wetlands help mitigate flooding by holding onto rainwater and slowly releasing that water over time. If you pour water on a table, it runs right off, but if you've got the wetland, it's kind of like a sponge- it holds on to it and releases it slowly. Building this highway through the wetland impacts its ability to store water and increases impervious surfaces making water runoff. The [proposed road] would further impact its ability to store floodwaters let alone the impacts that would happen in Marinaville, which is already drowning in floodwaters with five major floods since 2016.

Another MCP partner, Carrie, who works with an environmental advocacy organization and holds an advanced degree in marine science, spoke passionately about protecting both the environment and the people who would be impacted by this road development, including Marinaville,

There are measures in place to protect wetlands [but] you know full well that that does not cover everything. We still build in wetlands and impact their ability to function... Watersheds are as unique and different as separate countries. A sub watershed in Marinaville is not the same as a sub watershed in [an adjacent community] though they are connected by the river. Just as plant and animal communities cannot easily relocate to other ecosystems, the people of a community cannot just simply up and move. Our communities are not just the people but also the culture, history, and families tied to that land. We may not care about an endangered red cockaded woodpecker or Venus flytrap but we must certainly care about the people.

When the council chamber deliberated before voting for funding to support the road, none of the concerns raised by MCP partners were specifically addressed, and there was no mention of the Marinaville community. The motion to fund the road passed unanimously. Despite the efforts of the MCP, Marinaville had essentially been rendered invisible by county council members as they voted for a road that is proposed to be built through the community. In creating this invisibility, the county maintains deliberate ignorance regarding the impacts of its decisions on Marinaville residents.

Discussion/Conclusion

As a method of inquiry, the role of IE is to “figure out how things work - to discover how people’s local embodied knowings and activities link up to discourse, practice, and knowledge” (Nichols, 2008, p. 685). For the MCP, we find that “work” includes navigating and negotiating a political environment which seeks to diminish, ignore, or erase both experiential knowledge and scientific expertise that links flood risk to expanding development. The work of the MCP is forever bumping up against economic “imperatives” that drive growth in the surrounding county. Not only are there political and economic ties between county council and land developers, but neoliberal ideologies are utilized to resist regulatory actions that would protect the environment- and the people- of the county.

For organizations or institutions that benefit from unequal environmental relations, “cultivating ignorance is often more advantageous, both institutionally and personally, than cultivating knowledge” (McGoey, 2012, p. 555) because ignorance allows greater control of resources and plausible deniability in the aftermath of disaster. Thus, we see county officials maintain strategic ignorance regarding the concerns of the Marinaville community by discrediting the expertise of collaboration partners, appeasing the MCP and other community advocates, blocking access to information, and/or shielding themselves from information. When confronted with inconvenient truths, “uncomfortable knowledge”, or presented with data that has potential to “undermine key organizational arrangements or the ability of institutions to pursue their goals,” government or corporate entities may engage in denial, dismissal, diversion, or displacement to minimize culpability (Rayner, 2012, p. 107-108). Indeed, these tactics protect county officials from the consequences of decisions that line county coffers but externalize the costs of flooding to low-income residents in communities like Marinaville.

There are significant challenges faced by the MCP, but we believe there is cause for cautious optimism. First, in the process of building relationships with county officials, the community may also identify allies. After a recent public hearing, for instance, a community member invited a county staff person to ride through Marinaville with her and view areas of concern for flooding. He followed through with that meeting and will hopefully use this firsthand knowledge to support the community. Second, some MCP members have identified ways to work around county obstruction or inaction. For example, a legal team involved with the MCP is now pressuring the state to act on aspects of flood mitigation where the county has failed. Finally, the

riparian corridor in the county is dotted with communities like Marinaville. Several have heard about the MCP and are interested in either working with the Marinaville community partnership or establishing a similar partnership of their own. With strength in numbers, perhaps county officials will be more receptive to community concerns. If residents of communities like Marinaville don't organize as the county grows around them, their fate is uncertain. Armed with their own experiential knowledge in combination with scientific expertise and data, a community-science partnership might give them a fighting chance.

References

- Allen, B. (2003). *Uneasy alchemy: Citizens and experts in Louisiana's chemical corridor disputes*. MIT Press.
- Allen, B. (2007). Environmental justice, local knowledge, and after-disaster planning in New Orleans. *Technology in Society*, 29, 153–159. <https://doi.org/10.1016/j.techsoc.2007.01.003>
- Anderson, W. A. (2008). Mobilization of the Black community following Hurricane Katrina: From disaster assistance to advocacy of social change and equity. *International Journal of Mass Emergencies & Disasters*, 26(3), 197-217. <https://doi.org/10.1177/028072700802600303>
- Arcaya, M., Raker, E. J., & Waters, M. C. (2020). The social consequences of disasters: Individual and community change. *Annual Review of Sociology*, 26, 671-691. <https://doi.org/10.1146/annurev-soc-121919-054827>
- Backstrand, K. (2004). Scientisation vs. civic expertise in environmental governance: Eco-feminist, eco-modern and post-modern responses. *Environmental Politics*, 13(4), 695–714. <https://doi.org/10.1080/0964401042000274322>
- Barber, K., & Haney, T. (2015). The experiential gap in disaster research: Feminist epistemology and the contribution of local affected researchers. *Sociological Spectrum*, 36(2), 57-74. <https://doi.org/10.1080/02732173.2015.1086287>
- Beck, U. (1992). *Risk society: Towards a new modernity*. SAGE Publications.
- Bhakuni, H., & Abimbola, S. (2021). Epistemic injustice in academic global health. *The Lancet Global Health*, 10, E1465-E1470. [https://doi.org/10.1016/s2214-109x\(21\)00301-6](https://doi.org/10.1016/s2214-109x(21)00301-6)
- Birkenholtz, T., & Simon, G. (2022). Ignorance and uncertainty in environmental decision-making. *Geoforum*, 132, 154-161. <https://doi.org/10.1016/j.geoforum.2021.12.003>
- Brown, P. (2007). *Toxic exposures: Contested illnesses and the environmental health movement*. Columbia University Press. <https://doi.org/10.7312/brow12948>
- Bullard, R. (2008). Differential vulnerabilities: Environmental and economic inequality and government response to unnatural disasters. *Social Research: An International Quarterly*, 75, 753-784. <https://doi.org/10.1353/sor.2008.0035>
- Bullard, R., & Wright, B. (2012). *The wrong complexion for protection: How the government response to disaster endangers African American communities*. NYU Press. <https://doi.org/10.18574/nyu/9780814799932.001.0001>

Carr, A. J. L. (2004). Why do we all need community science? *Society & Natural Resources*, 17, 841–849.

Carrera, J. S., Key, K., Bailey, S., Hamm, J. A., Cuthbertson, C. A., Lewis, E. Y., Woolford, S. J., DeLoney, E. H., Greene-Moton, E., Wallace, K., Robinson, D. E., Byers, I., Piechowski, P., Evans, L., McKay, A., Vereen, D., Sparks, A., & Calhoun, K. (2019). Community science as a pathway for resilience in response to a public health crisis in Flint, Michigan. *Social Sciences*, 8(3), 94. <https://doi.org/10.3390/socsci8030094>

Clark, C. (2020). Race, austerity and water justice in the United States: Fighting for the human right to water in Detroit and Flint, Michigan. In F. Sultana & A. Loftus (Eds.), *Water politics: Governance, justice and the right to water* (pp. 175-188). Routledge. <https://doi.org/10.4324/9780429453571>

Corburn, J. (2005). *Street science: Community knowledge and environmental health justice*. MIT Press. <https://doi.org/10.7551/mitpress/6494.001.0001>

Cordner, A., & Brown, P. (2021). Science, expertise, and environmental Justice. In M. Mascarenhas (Ed.), *Lessons in environmental justice: From civil rights to Black Lives Matter and Idle No More* (pp. 77-94). SAGE Publications. <https://doi.org/10.4135/9781544321974.n6>

Devault, M. L. (2006). Introduction: What is institutional ethnography? *Social Problems*, 3, 294-298. <https://doi.org/10.1525/sp.2006.53.3.294>

Fischer, F. (2005). *Citizens, experts, and the environment: The politics of local knowledge*. Duke University Press. <https://doi.org/10.1515/9780822380283>

Freudenberg, W. R., Gramling, R., Laska, S., & Erikson, K. T. (2009). *Catastrophe in the making: The engineering of Katrina and the disasters of tomorrow*. Island Press. <https://doi.org/10.5822/978-1-61091-156-6>

Garcia-Lopez, G. (2018). The multiple layers of environmental injustice in contexts of (un)natural disasters: The case of Puerto Rico post-Hurricane Maria. *Environmental Justice*, 11(3), 95-142. <https://doi.org/10.1089/env.2017.0045>

Gotham, C. F., & Greenberg, M. (2014). *Crisis cities: Disaster and redevelopment in New York and New Orleans*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199752225.001.0001>

Frickel, S., Gibbon, S., Howard, J., Ottinger, G., & Hess, D. (2010). Undone science: Charting social movement and civil society challenges to research agenda setting. *Science, Technology, and Human Values*, 35(4), 444–473. <https://doi.org/10.1177/0162243909345836>

- Frickel, S., & Vincent, M. B. (2007). Hurricane Katrina, contamination, and the unintended organization of ignorance. *Technology in Society*, 29, 181–188. <https://doi.org/10.1016/j.techsoc.2007.01.007>
- Frickel, S., & Vincent, M. B. (2011). Katrina's contamination: Regulatory knowledge gaps in the making and unmaking of environmental contention. In R. A. Dowty & B. Allen (Eds.), *Dynamics of disaster lessons on risk, response and recovery* (pp. 11-28). Routledge. <https://doi.org/10.4324/9781315067193-12>
- Fricke, M. (2007). *Epistemic injustice: Power and the ethics of knowing*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780198237907.001.0001>
- Habermas, J. (1970). Towards a theory of communicative competence. *Inquiry: An Interdisciplinary Journal of Philosophy*, 13(1–4), 360–375. <https://doi.org/10.1080/00201747008601597>
- Jasanoff, S. (2003). Technologies of humility: Citizen participation in governing science. *Minerva*, 41(3), 223–244.
- Kimura, A., & Kinchy, A. (2019). *Science by the people: Participation, power, and the politics of environmental knowledge*. Rutgers University Press. <https://doi.org/10.36019/9780813595115>
- Kinchy, A., Jalbert, K., & Parks, S. (2014). What is volunteer water monitoring good for? Fracking and the plural Logics of participatory science. *Political Power and Social Theory*, 27, 259–289. <https://doi.org/10.1108/s0198-871920140000027017>
- Kleinman, D., & Suryanarayanan, S. (2012). Dying bees and the social production of ignorance. *Science, Technology, and Human Values*, 38(4), 492-517. <https://doi.org/10.1177/0162243912442575>
- Knowles, S. G. (2014). Engineering risk and disaster: Disaster-STS and the American history of technology. *Engineering Studies*, 6(3), 227-248. <https://doi.org/10.1080/19378629.2014.967697>
- Lukasiewicz, A. (2020). The emerging imperative of disaster justice. In A. Lukasiewicz & C. Baldwin (Eds.), *Natural hazards and disaster justice* (pp. 3-23). Palgrave Macmillan. https://doi.org/10.1007/978-981-15-0466-2_1
- Mascarenhas, M. (2020). Introduction. In M. Mascarenhas (Ed.), *Lessons in environmental justice: From civil rights to Black Lives Matter and Idle No More* (pp. xvii-xx). SAGE Publications. <https://doi.org/10.4135/9781544321974.n1>

McCauley, J. (2017). "We can help the people who can make a difference": Motivations, goals, and outcomes in volunteer water quality monitoring. *Sociological Focus*, 50(2), 125-137. <https://doi.org/10.1080/00380237.2017.1251748>

McGoey, L. (2012). The logic of strategic ignorance. *The British Journal of Sociology*, 63(3), 553-576. <https://doi.org/10.1111/j.1468-4446.2012.01424.x>

Moore, K., Kleinman, D., Hess, D., & Frickel, S. (2011). Science and neoliberal globalization: A political sociological approach. *Theoretical Sociology*, 40, 505–532. <https://doi.org/10.1007/s11186-011-9147-3>

Nichols, N. (2008). Gimme shelter! Investigating the social service interface from the standpoint of youth. *Journal of Youth Studies*, 6, 685-699. <https://doi.org/10.1080/13676260802392957>

Nichols, N., Griffith, A., & McLarnon, M. (2017.) Community-based and participatory approaches in institutional ethnography. In J. Reid & L. Russell (Eds.) *Perspectives on and from Institutional Ethnography (Studies in Qualitative Methodology, Vol. 15)* (pp. 107-124). Emerald Publishing. <https://doi.org/10.1108/S1042-319220170000015008>

Oreskes, N., & Conway, E. M. (2010). *Merchants of doubt: How a handful of scientists obscured the truth on issues from tobacco smoke to climate change*. Bloomsbury.

Ottinger, G. (2009). Buckets of resistance: Standards and the effectiveness of citizen science. *Science, Technology, and Human Values*, 32(2), 244-270. <https://doi.org/10.1177/0162243909337121>

Ottinger, G. (2013). *Refining expertise: How responsible engineers subvert environmental justice challenges*. New York University Press. <https://doi.org/10.18574/nyu/9780814762370.001.0001>

Ottinger, G. (2023). Careful knowing as an aspect of environmental justice. *Environmental Politics*, 33(2), 199-218. <https://doi.org/10.1080/09644016.2023.2185971>

Pellow, D. (2017). *What is critical environmental justice?* Wiley.

Rayner, S. (2012). Uncomfortable knowledge: The social construction of ignorance in science and environmental policy discourses. *Economy and Society*, 41(1), 107-125. <https://doi.org/10.1080/03085147.2011.637335>

Richter, L., Corder, A., & Brown, P. (2021). Producing ignorance through regulatory structure: The case of per- and polyfluoroalkyl substances (PFAS). *Sociological Perspectives*, 64(4), 631-656. <https://doi.org/10.1177/0731121420964827>

Smith, D. (2005). *Institutional ethnography: A Sociology for people*. Altamira Press.

South Carolina Office of Resilience. (2023). *South Carolina strategic statewide resilience and risk reduction plan*. <https://scor.sc.gov/resilience>

Sultana, F. (2022). Critical climate justice. *The Geographical Journal*, 188(1), 118–124. <https://doi.org/10.1111/geoj.12417>

Tierney, K. (2014). *The social roots of risk: Producing disasters, promoting resilience*. Stanford University Press. <https://doi.org/10.1515/9780804791403>

Tierney, K. (2019). *Disasters: A sociological approach*. Polity Press.

USA Facts. (2022). *Our changing population: South Carolina*. <https://usafacts.org/data/topics/people-society/population-and-demographics/our-changing-population/state/south-carolina/>

Verchick, R. R. M. (2012). Disaster justice: The geography of human capability. *Duke Environmental Law and Policy Forum*, 23(1), 23-71.

Woodhouse, E. (2011). Conceptualizing disasters and extreme versions of everyday life. In R. A. Dowty & B. Allen (Eds.), *Dynamics of disaster lessons on risk, response and recovery* (pp. 61-74). Routledge. <https://doi.org/10.4324/9781315067193-15>



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