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Knowledge, Attitudes and Practices of Environmental Justice in Higher Education

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**KNOWLEDGE, ATTITUDES AND PRACTICES OF ENVIRONMENTAL
JUSTICE IN HIGHER EDUCATION**

by

MARJORIE MAY NUSSBAUM

(Under the Direction of John Weaver)

ABSTRACT

Research suggests that issues of environmental justice are not being routinely included in the curriculum of the K-12 classroom and that teachers in those grades do not feel prepared to teach it. Likewise, little has been written about the addition of these topics to higher education coursework, leaving the question of inclusion at this level of education as well. This apparent lacuna may point to at least one reason why K-12 teachers are neither knowledgeable about environmental justice nor prepared to teach it. To discover the current state of inclusion in higher education, a mixed methods study was conducted to determine the knowledge, attitudes and practices of those teaching in one segment of higher education—namely all BA/BS granting undergraduate programs of environmental science and/or environmental studies within the United States. The results from this study suggest that while those teaching in these departments can provide a general description of what environmental justice is, there is much confusion and little agreement about exactly what it encompasses, who it affects, its causes and its solutions. However, responses do indicate that a sizable number of those teaching in these departments believe that environmental justice is an important topic which students should know

about. Acting on that belief, most report that they do include environmental justice at some level in courses where the topic fits.

INDEX WORDS: Environmental justice, Education, Higher education, Environmental science, Environmental studies

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IN HIGHER EDUCATION

by

MARJORIE MAY NUSSBAUM

Doctor of Education, Georgia Southern University, 2013

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DEDICATION

TO BRETT

Who helped me believe in myself...

Who advised and mentored me through this process...

But most of all

Who pushed me along...

When my inner stores were running low...

When the task seemed too big...

When I forgot the importance of the task

TO BETTY

Who saw my abilities before I did...

Who believed in me...

Who read and edited again and again...

But most of all

Who has been a loving and caring friend

PROLOGUE

Environmental Justice: A Personal Statement

Inquiry about the topic of my dissertation was a common occurrence. Perhaps some were making polite talk or they were simply nosy. Others were genuinely interested. Some understood the concept, and some wanted to know more about what environmental justice is. Many however ultimately asked a sort of two-fold question. How, they were asking, does environmental justice connect to my own life, my own education, my degree, and how does environmental justice connect to education in general—that is, what is the place of environmental justice in curriculum and in the classroom?

In reality, it seems that what was actually being asked is a broader set of questions that can be framed by the following: Is there a place for justice education of any kind within education? In which sector of education might this be appropriate? Moreover, how does justice education fit into the assumed purposes of education? My personal feeling is that there is—indeed, there must be, a place for the teaching of the multiple faces of justice in education; that there are many places where the teaching of justice issues is appropriate; and that doing so is not merely a curricular add-on, but an asset to knowing and understanding.

As the planning and implementation portions of this study took shape, I found myself considering not only the logistics of the task at hand, but also the reasons why I was focusing on environmental justice as the topic of my dissertation. While there are

perhaps hundreds of reasons I might cite as important contributors to this decision, I think there is a composite set of experiences which are seminal. Both involve my childhood, but in different ways.

In the late 1940's, after the dark and frightening days of World War II, our nation was optimistically returning to the business of living in a time of peace. Men newly home from the war were fathering a cohort of babies and I became a part of that "baby-boomer" cohort in 1950. In addition, the nation energetically pushed forward to develop itself in the realms of industry and technology, but unfortunately without much thought for the environment. Environmental degradation was accelerated, and similar to many other places, Lake Erie (what I considered to be "my lake," "my place" through residence along its shores) was becoming totally tarnished by the pollutants of human activities. Likewise, not much thought was given to equality and justice for those considered to be "the other." Civil rights for many were nonexistent—they were voiceless. The place and voice of women was in flux—change was afoot. As a child of the time, I absorbed these things, yet at the same time I secretly questioned them and in many ways was appalled by them. But although in many senses I had a very good childhood, I also knew that it was not without parameters. One of those parameters forbade questioning social and moral norms. In essence, to question out loud meant not being a "good little girl," and perceiving that being a "good little girl" was the key to maintaining my mother's love, my thoughts were often left invisible.

I believe it was both the feeling of loss of place...my place...my lake...through degradation, and the inability to give sound to my thoughts...my questions...my anger...through a perceived oppression of parental authority which ultimately grew into

my current passion for justice. Because I had experienced these injustices personally I was able to take the two wrongs—the impacts of human activity and the experience of voiceless-ness—and channel them into something new. Coming from this place of the underdog I framed a new and voiced self with an insatiable hunger to fight for the environment and for those who are oppressed. This then is the foundation on which I place the work of this dissertation.

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CHAPTER 1

INTRODUCTION

ENVIRONMENTAL JUSTICE: MISSING THE MARK IN EDUCATION

Environmental justice is “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies”

(Bullard and Johnson, p. 558).

As the social and political activism of the late 1960's and early 1970's, much of which was focused on issues of race and the antiwar movement, lost momentum, another broader movement rode its coattails into the late 1970's and early 1980's. As before, this was a time in American history heavily weighted with social and political activism, but the focus had shifted. Now the call for environmental justice joined other voices demanding fair and just treatment of all peoples (Kushmerick et al., 2007). Like its former sociopolitical counterparts of race and war, environmental justice became an important element within the national news and the political rhetoric of the age. But as with other topics that appear in the national news and in the conversation of the time, the public focus on environmental justice was fleeting; long before fully addressing either the foundations or the outcomes of environmental inequity, the public eye was drawn toward other issues and concerns. However, in his book *Environmental Justice: Legal Theory and Practice*, Barry Hill (2009) documents that although no longer in the daily news and the public eye, environmental justice does remain within the domains of the legal and

political. This position does not routinely garner public notice and for most people, the issues of injustice which drove the initial activism seem to have evaporated.

In many respects environmental justice has become invisible. This condition of invisibility is pervasive, and extends to the American classroom where topics of environmental justice are routinely absent from the K-12 curriculum. Kushmerick, et al. (2007) note that most “mainstream environmental education in the US has a long way to go before it adequately addresses this very important need” (p. 388). This absence or near-absence, is often evident even in the most popular and widely distributed and used environmental education curricula (i.e. *Project WET*, *Project WILD* and *Project Learning Tree*). While these materials were designed specifically to enable and assist teachers in presenting a broad spectrum of environmentally related and pertinent topics to their students, the focus of these well-respected curricula fails in the area of environmental justice. But, as Kushmerick, et al. (2007) have argued, the topics of environmental justice need “to be an integral part of what we teach to all students” (p. 388) and that “[a]ll students should be taught about environmental justice because it is an important environmental and social problem that occurs in a wide range of contexts, from Native American reservations to migrant farm workers, and *intimately affects everyone*” (my emphasis) (p. 390).

There are a number of contributing factors which inhibit the inclusion of environmental justice in the classroom. First there is the foundational issue of where to place topics of environmental justice within the curriculum. Fensham (1977) states that “the environment does not fit neatly within the bounds of any of the traditional subject areas of the curriculum” (p. 30) This can, as Reed (in Adamson et al., 2002) observes,

“isolate the environment from its necessary interrelation with society and culture” (p. 146). But by default, environmental justice, if included at all, is most often included under the umbrella of environmental education (Kushmerick et al., 2007) which has as its focus not socio-political justice, but rather knowledge of the natural world. Second, adding further to the misplacement of environmental justice within the school setting, Gough (1997) frames environmental justice as an orphan within the greater curriculum when she notes that educators often struggle to delineate the proper placement of environmental education and that it is placed within a variety of science and social studies venues. Third, as mentioned above, there is a notable lack of prepared material dealing with environmental justice from which teachers can draw lesson plans. Fourth, not only is this topic routinely absent from curriculum developed to teach environmental education, but the creators of this curriculum often lack diversity. Lewis and James (1995) say that “[i]n our experience, people of color have not been an integral part of all levels of planning and implementation of formal environmental education [and that they are] predominantly from White middle- or upper-middle-class backgrounds” (p. 9). When curriculum developers are middle class and white, issues predominantly affecting minorities (such as environmental justice) are often overlooked for inclusion (Lewis and James, 1995). In this regard, Running Grass, Executive Director of the Three Circles Center (San Francisco) (1995) opines that “[w]hat is commonly accepted as environmental education is distributed on the basis of race and class in a narrow range of geographic locations. Where children of color are exposed to environmental education, frequently it doesn’t reflect their cultural heritage and values” (p. 14). A number of authors have addressed this issue. For instance, Bowers (1996) states that “[t]o

understand the complexity of the environmental processes that contribute to various and often contradictory forms of environmental education, it is necessary to recognize that education, in its broadest sense, is synonymous with culture” (p.5). Focusing further on the contradictory forms of environmental education which Bowers mentions, Blum (2009), points to the tensions that can emerge among those environmental educators who support science-based curriculum, those who support a socially-based curriculum, and those who adopt a middle ground approach to curricular content. She argues that

while theoretical discussion about the relative merits of diverse approaches to environmental teaching and learning is important, if that analysis is not situated within a particular social, economic and political context, it is likely to reveal relatively little about how or why particular perspectives on environmental education may dominate or remain marginal in a specific place (p. 727).

Yet Kahn and Friedman (1998), who looked specifically at the Black community, assert that the environmental concerns and how these concerns are understood within the values of the community remain for the most part unknown. In other words, curriculum written through a White social lens may indeed conflict with the understandings and values of non-white communities (Black, Hispanic, Asian, Native American, Native Hawaiian, etc.).

A fifth factor which can suppress the inclusion of topics of environmental justice in the K-12 classroom is the emphasis which No Child Left Behind places on fact-based learning as assessed through standardized tests. But Robottom (1991) maintains that this approach is counterproductive to a style of instruction compatible with issues of environmental justice because it is “an emphasis on didactic teaching of pre-existing

knowledge-knowledge that is systematically selected and organized before the classroom activities are defined, which ‘transmit’ the knowledge to students” (p.21). Gough (1997) further expands this idea by emphasizing that issues of justice are best learned through a call to empathy that discovers justice through discussion and meaning-making, not through the acquisition of fact. She then goes on to say that in this performance-driven climate, any request to include topics of environmental justice can seem to the classroom teacher “as yet another adjectival education lobby group wanting space in an already overcrowded curriculum” (Gough, 1997, p. 10).

Finally, while there may be other factors which inhibit the inclusion of environmental justice within the curriculum, it is plausible that the greatest roadblock to inclusion is a lack of knowledge and preparation to teach the topic. That is, colleges and universities are failing to include issues of environmental justice in meaningful ways in the curriculum. A study of preservice teacher preparation conducted by Heimlich et al. (2004) shows that both awareness and use of environmental education resources (the primary portal for issues of environmental justice in many schools) is low. These authors further suggest that because the National Council for Accreditation of Teacher Education (NCATE) requirements act in a gatekeeper capacity, and correlate strongly with certification requirements and state mandates for preservice training, there is the perception that preparation should concentrate primarily on what is deemed or assumed to be required content. Elaborating further on the idea that teacher preparation programs routinely exclude environmental education (and consequently environmental justice) Heimlich, et al. state that

the greatest challenge facing incorporation of environmental education into teacher-preparation programs is in the political arena. The political system (federal and state) drives many of the teacher-preparation programs. The local politics of school districts—each of which is its own decision-making body in terms of teacher certification requirements—makes a single point of entry into teacher-preparation impossible. The ability to institutionalize EE [environmental education] into teacher-preparation programs faces a significant challenge that the field needs to address collectively (p.20).

Anecdotal evidence suggests that indeed few adults feel capable of defining or discussing the topic of environmental justice as it intersects with the social and political aspects of society. Concerning college-educated adults, while Heimlich et al. focused on preservice teacher preparation, Ridener (1999) looked at differences in ecological worldviews and environmental attitudes among college students in different programs of study; in particular he compared business and non-business majors. Although ecological worldviews and environmental attitudes may or may not *specifically* encompass topics related to environmental justice, his findings do show that in pre- and post test statistics, students in business programs score lower than students in science programs in ecological worldviews and positive and caring attitudes about environmental issues. Again, this study did not deal specifically with environmental justice, which may or may not be a component of the enhanced views and attitudes which those focused on science have. It does point out however, that a significant number of college graduates (i. e. education and business majors) have had little or no introduction to what Kushmerick et al. claim is

the primary carrying medium for environmental justice in the K-12 grades— environmental education—and moreover, that they did not receive this information in higher education either.

This discussion highlights not only the absence of topics of environmental justice in multiple levels of education but also introduces a perplexing conundrum. In the following chapter it will be shown that there is indeed a strong case for the inclusion of environmental justice in the American classroom curriculum. But where best to initiate this type of education appears to be unexplored. If teachers, parents, politicians and businesspersons are uninformed about environmental justice, it is unlikely that such content will appear important in the K-12 classroom and be introduced or encouraged. However, if those who graduate from this educational milieu are uninformed, they likewise will not expect or demand inclusion of material and discussion concerning environmental justice in their own higher education experience, thus perpetuating the problematic cycle. While there may be arguments for interrupting the cycle at numerous points, a strong case can be made for doing so by centering on adults and in particular within higher education. According to a Bureau of Labor Statistics news release (April 2012), as of October 2011, 68.3% of those who graduated from high school the previous spring were enrolled in college or university programs. This is a significant number of young adults, representing a cohort poised to join the voting and decision-making citizenry of the nation. Additionally, this group embodies the energy and idealism of youth, key ingredients in issues of social justice and social change such as environmental justice. In other words, these young adults will become the parents, the educators, the

businesspersons and the community leaders of the future, making them the most reasonable focus of this education.

In the following chapter it will be shown that there are a significant number of voices expressing the importance of environmental justice. But, recapping the problem, the research conducted for this study shows that there is little or no inclusion of this topic in education at either the K-12 or higher education levels. This omission then gives neither those who have attended college nor those who did not choose higher education, an insufficient knowledge of the principles, connections and interconnections which constitute issues of environmental justice. This in turn impedes their ability to make wise, informed and socially just decisions about their own actions and choices.

The causes of this omission are arguably multiple and tangled. However, in analyzing these causes, the source appears to emanate from a general lack of both knowledge and concern within the general public regarding 1) what environmental justice is, 2) how and why it occurs, and 3) who the primary and secondary victims of this type of injustice are. In turn, this absence of knowledge has, it seems, been initiated and perpetuated by, in particular, the failure of higher education to include issues of environmental justice in its curriculum.

Looking Ahead

Chapter 1 has introduced the reader to a general history of the environmental justice movement and its tenets. In addition, the lack of inclusion of topics of environmental justice in the curriculum of the K-12 grades was presented, accompanied by reasons why this might be so. It was posited that one of the primary reasons for this

absence is that the society as a whole is not knowledgeable about environmental justice and fails to see it as important. In turn, it was speculated that this deficiency has been initiated and perpetuated by the lack of inclusion of topics of environmental justice in the curriculum of higher education.

In Chapter 2, a thorough search of the literature is presented. This overview shows that while numerous voices insist that environmental justice is considered to be an important issue in many sectors of the society, particularly government and education, its presence in the K-12 grades is indeed limited. Additionally inclusion in the curriculum of higher education is only sparsely documented, suggesting that what has been posited is valid.

To further investigate the apparent scarcity of topics of environmental justice in the curriculum, one segment of higher education was surveyed to find the knowledge, attitudes and practices of those teaching in departments of environmental science and environmental studies concerning environmental justice. Chapter 3 outlines the procedures used to conduct this research. After identifying qualifying institutions of higher education and practitioners within those institutions, a mixed methods online survey was used to gain information concerning the knowledge, attitudes and practices of this population of educators toward environmental justice.

In Chapter 4, the answers obtained from the questionnaire described above were analyzed quantitatively and qualitatively. Quantitative analysis used Pearson's r and sets of means obtained from the data to search for correlations among and between the demographic information of the participants and their knowledge, attitudes and practices of environmental justice in their classrooms. The editing analysis style was used to code

the qualitative portion of the questionnaire into themes. Themes were tabulated and a narrative analysis was performed.

Chapter 5 presents the reader with the research findings. These findings are compared first to the null hypothesis (H_0) which states that there is no statistically significant correlation between/among the knowledge, attitudes and practices of environmental justice as well as the demographics of professors teaching in departments of environmental science/environmental studies in institutions of higher education and then to the alternate (H_1) hypothesis which states that there is a statistically significant correlation between/among the knowledge, attitudes and practices of environmental justice as well as the demographics of professors teaching in departments of environmental science/environmental studies in institutions of higher education. Second, the findings are compared to the set of general assumptions made at the beginning of the study which were used to generate the hypothesis, the research question and the survey questions. Additionally, implications of the research findings are discussed and suggestions for further research are given.

CHAPTER 2

ENVIRONMENTAL JUSTICE: PERCEIVED AS IMPORTANT—

MISSING IN ACTION

Introduction

Experience tells us that unjust behavior is a ubiquitous and troublesome aspect of human interaction. Certainly the timeline of human history testifies to such acts of greed, dishonesty, selfishness and cruelty (Willinsky, 1998; Smith, 1944). While many of the particulars of these injustices have changed over time, mirroring the political, economic, religious and social climate of the era, the core and heart of injustice remains the same; personal or group acts of injustice impact others, creating harm. This point is made specifically because the injustice which will be considered in this study may seem to have emerged upon the landscape of the past few decades as a new issue. In reality however, it is an old problem, cloaked in the attire of the present and brought to public attention through the intersection of an ongoing racial inequity, the need to dispose of new and increasingly toxic pollutants, the generation of scientific evidence concerning these toxins and public health, and the civil rights movement. In other words, following Zartman's (2003) ideas concerning the timing of events within the flow of history, it was not until the precise moment of ripeness had arrived (that is all factors needed to address the matter had converged) that the issues of what has come to be called *environmental justice* surfaced within the social and public consciousness (Bullard, 1994). What had been socially normalized for decades, that is, the siting of polluting industries, landfills, slaughterhouses and other undesirable facilities, in the neighborhoods of the less

fortunate, primarily people of color, now could be seen as acts of injustice. Thus, while the environmental justice movement may mistakenly appear to be a wholly new and unique entity, the reality is that it is an old problem that has simply been brought forward within the events of recent history.

In reading the literature concerning environmental justice, a theme emerges that frames this as an important social and political concern as well as a topic for educational address. While some portions of the literature simply make a case for the importance of environmental justice, others delineate how the educational field is and should be speaking to the topic. In particular this study focuses on the ways in which higher education relates to and addresses environmental justice.

This emphasis stems from the logical assertion that while educating toward environmental justice is vitally important and foundational within the K-12 years, that very education is implemented and impelled by those who are trained and educated at the college level. Therefore, the body of knowledge needed to effectively become literate (that is adequately prepared to teach) in this area must be gained within higher education. Indeed, the K-12 teacher may be the primary conduit of environmental justice knowledge for those who do not go on to institutions of higher education. Likewise, for those who do attend college, it is in the college and university setting that young adults have an unprecedented opportunity to become grounded in multiple areas, one of which should be environmental justice. This is critically true for those who plan careers in teaching, whether it be K-12 or higher education. In addition, it is often within the higher education milieu that students solidify their learning, their goals, their ethics and their approach to career and perhaps even parenting, all arenas where the tenets of environmental justice

can be highly applicable. Thus, education toward environmental justice literacy is important within all higher education disciplines.

Fleshing out Environmental Justice: History and Definitions

At this point, it is appropriate to both fully define the term *environmental justice* and to consider a brief history of the movement which has propelled, shaped and defined its current parameters. To begin, an idea which was briefly mentioned in the introduction section of this chapter must be restated and expanded. In the past the ideas of essentialism often dictated that circumstances which can now be categorized as instances of environmental justice abuse, were to be thought of as the natural outcomes of racial characteristics, motivational shortcomings, mental deficiencies, and social ineptitude (Harris and Sim, 2001; Takeuchi and Gage, 2003). Essentially, unequal treatment and unequal exposure to toxins, pollutants, environmentally induced stress and unsanitary conditions, as well as the lack of access to healthcare, open space, quality education and equal transportation were not seen as being inflicted upon populations of color and/or poverty by the sociopolitical structure, but rather as “normal” or even as self-inflicted and self-chosen. By constructing this situation not as a type of hegemony, but rather as a social given, one as inevitable as the passing of the seasons and as predictable as day following night, the true import of the injustice became an invisibility that was observable only to those under its oppressive weight. Indeed, as Bullard (1994) tersely argues, at that time “the concept of environmental justice had not registered on the radar screens of environmental, civil rights, or social justice groups” (p.555). Expanding this idea, Bowers (1996) explains that

[t]he cultural patterns that give predictability to everyday life are sustained and renewed through communication. The multiple language systems that reproduce these cultural patterns as individuals interact with each other and the natural environment are part of the ongoing process of education. Culture in effect represents earlier ways of understanding that are encoded (a) in material objects such as the design of cars, buildings, and computers; (b) at the level of taken-for-granted patterns of interaction and thought; and (c) even in the intentional and reflective interpretations of everyday life (p. 5).

Looking at the History of Environmental Justice

Environmental *injustice* was not a new occurrence in the early 1980's (McDonnell Douglas Corp. v. Green, 1973). What was new was the spirit of the time. As delineated earlier, basic civil rights for the nation's Black population were just freshly won and as Zartman (2003) points out, the time was ripe to test those rights further. Thus, the catalytic moment when the environmental justice movement is considered by most to have emerged as a recognized struggle, occurred in 1982 when a proposal was made to site a PCB hazardous waste disposal facility in Warren County (North Carolina), a predominantly African-American community (Hill, 2009; Bullard and Johnson, 2000). While the siting of such noxious facilities in African-American communities was as noted, not a novel phenomenon, the recruitment of the civil rights movement to provide strategic organizing assistance to resist this siting was novel (Eady, 2010). The strategic assistance from the already strong civil rights movement became the critical turning point in the struggle for environmental justice. Although the protests and arrests ignited by the

proposal did not succeed in blocking construction of the facility, they did “put environmental racism” on the map (Bullard and Johnson, 2000, p.556). They also impelled the generation of the 1983 U.S. General Accounting Office study, *Siting of Hazardous Waste Landfills and Their Correlation with Racial and Economic Status of Surrounding Communities*. Too, they precipitated the Commission for Racial Justice’s 1987 *Toxic Waste and Race in the United States*, the first study of its kind, one which demonstrated the relationship between demographic characteristics and the siting of waste facilities (Bullard and Johnson, 2000). An additional document which was spawned by the conflict and which has proven to be critical within the foundational work of the environmental justice movement is the 1987 report generated by the United Church of Christ Commission for Racial Justice. This document, penned by Reverend Benjamin Chavis, set in print what has come to be considered the seminal definition of environmental racism as

racial discrimination in environmental policy-making and the enforcement of regulations and laws, the deliberate targeting of people of color communities for toxic waste facilities, the official sanctioning of life-threatening presence of poisons and pollutants in our communities, and history of excluding people of color from leadership in the environmental movement.

From its inception in 1982, the environmental justice movement in the United States has grown and changed, adding the support of mainstream environmental groups (Eady, 2010; Goldman, 1996; Hofrichter, 1993) and as Taylor (2000) notes, articulating and expanding the scope of environmental justice to include deficiencies in properly equipped and maintained environmental amenities within neighborhoods of color. These

amenities include parks, playgrounds and other open spaces. Additionally, much of the work that is currently being accomplished in the environmental justice arena centers not so much on social and political activism, but rather on policy and law (Hill, 2009).

Defining Environmental Justice

In 1982 Reverend Benjamin Chavis, director of the United Church of Christ's Commission for Racial Justice, first used the term *environmental racism* to describe what Bullard and Johnson (2000) later defined as "any environmental policy, practice, or directive that differently affects or disadvantages (whether intended or unintended) individuals, groups, or communities based on race or color" (p. 559). However, over time, the more inclusive term of *environmental justice* began appearing in the literature on occasion, although it seems unclear as to who first coined it. Again, Bullard and Johnson (2000) define *environmental justice* as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies" (p. 558). These two definitions reflect a change over time—that is, whereas in defining the original term of *environmental racism*, Bullard and Johnson specifically mention color and race as a basis of injustice, these same authors make a shift in language to become far more inclusive in defining the later term of *environmental justice*. This greater inclusiveness then not only encompasses all races, but also removes the term *community*, thus, effectively de-urbanizing environmental justice. While there are nuanced differences, reflecting a maturing of the movement in these definitions, the two terms have become in reality, synonymous (Blaise, 1996; Clark et al., 1995). Other

authors have offered various definitions and parameters which may lend greater depth to the term. For instance, Adamson, et al. (2002), using a critical geography lens, point to inequity in the distribution of power and wealth, which they note “often leads to social upheaval and the unequal distribution of environmental degradation and/or toxicity” (p. 5). But, placing a more positive and hopeful spin on the matter, Bryant (1995) chooses to define environmental justice as “cultural norms and values, rules, regulations, behaviors, policies, and decisions to support sustainable communities, where people can interact with confidence that their environment is safe, nurturing, and productive” (p. 6).

Seminal Moments in the Recent History of Environmental Justice

In 1992, responding to public concern about issues of race and environment, the United States Environmental Protection Agency (EPA), created the Office of Environmental Justice (EPA, 2012a). The duties of this office were to encompass the integration of environmental justice into all aspects of the operations and planning of the EPA, educational outreach, financial and technical assistance, and oversight of the Interagency Working Group in its endeavor to incorporate principles of environmental justice into all branches of the government. The following year (1993) Congress authorized the National Environmental Justice Advisory Council (NEJAC) which is charged with providing recommendations about multiple areas of environmental justice to all stakeholders and to assist the EPA in integrating environmental justice with its own initiatives and priorities (EPA, 2012b). Then, in 1994, perceiving the monumental significance of the application of environmental justice on a national scale, President Bill Clinton issued Executive Order No. 12898, “Federal Actions to Address Environmental

Justice in Minority Populations and Low-Income Populations.” Accompanying this historic directive was a presidential memorandum addressing all department and agency heads within the executive branch. This action was in response not only to a decade of environmental justice protest, activism and documentation that had begun with the siting of the Warren County, North Carolina PCB hazardous waste disposal facility, but also in response to work which had been done within the Clinton Administration (Hill, 2009). In essence, demonstrating the importance of fair play on a national scale, this document mandates that all agencies of the federal government must make the attainment of environmental justice a part of their mission. Hill (2009) summarizes Executive Order No. 12898 as a directive to these persons to:

(1) Focus attention of federal agencies on the human health and environmental conditions in minority and low-income communities with the goal of achieving environmental justice; (2) to foster nondiscrimination in federal programs that substantially affect human health or the environment; and (3) to give minority and low income communities greater opportunities for public participation in, and access to public information on matters relating to human health and the environment (p. 187).

For the remainder of the Clinton presidency a focus was kept on environmental justice with the US Department of Health and Human Services creating and supporting more than 70 environmental justice related initiatives, programs and activities (Gracia and Koh, 2011). Concerning this focus, Diane Takvorian, executive director of the Environmental Health Coalition (in Featherstone, 2005), asserts that there was a marked improvement, “especially at the regional level. The EPA has had a greater sensitivity, and

taken approaches more appropriate to our communities.” With the changing of national leadership in 2000, as Gracia and Koh (2011) point out, there was a subtle change in emphasis concerning Executive Order No. 12898. While the directive was not repealed, it was no longer a political priority, nor was it an emphasis. In August of 2001, the Bush administration’s EPA Administrator, Christine Todd Whitman, did declare continued commitment to Executive Order 12898 (United States Commission on Civil Rights, 2002), yet the transition to more conservative values and agendas, favored business and industry over neighborhoods and individuals. Governmental bodies were permitted to favor industrial production and corporate gain over environmental protection and the defense and fortification of social justice measures. Checker (2005) declared that this different emphasis impeded the progress of environmental justice in the United States and Gracia and Koh (2011) tersely say “in recent years, progress has slowed while challenges to environmental justice have mounted” (p.1).

Again, a change in national leadership brought a renewed focus on environmental issues and in September of 2010 the Obama Administration began work meant to reinvigorate an environmental justice focus within the federal government. In 2011, after a lapse of several years, the Interagency Working Group on Environmental Justice was reconvened and conducted a year-long series of listening sessions across the nation where repeated calls for attention to and consideration of environmental justice have been made (Gracia and Koh, 2011). It remains to be seen precisely what actions will be taken concerning the information gleaned.

While beyond the scope of the current research, it is nevertheless important to point out the connection between the changing emphasis or de-emphasis of

environmental justice measures within the social structure and politics. In this connection, a number of legal scholars have argued that it is not only the state but also corporate interests which drive environmental racism (Cole, 1994; Colopy, 1994; Lazarus, 1993). Thus, as the past has demonstrated, a political climate which places its primary emphasis on industrial growth and corporate interests (for instance the United States under the Bush administration) will be less likely to prioritize issues of environmental justice.

Likewise, a political climate which places its primary educational emphasis on factual material and which uses as its sole measure of performance the ability to regurgitate this material on standardized tests is less likely to promote social issues at any level of education. Indeed, Strauss (2002) argues that such performance-based policies eliminate spontaneous thought, a key ingredient in the consideration of social issues such as environmental justice.

Mapping the Research Road

Thus far it has been demonstrated that the environmental justice movement is both relatively young and that while its presence has persisted as a topic of discussion and sociopolitical action since its emergence in 1982, its trajectory has risen and fallen, often reflecting the economic and political pulse of the nation. This literature review will specifically consider this persistent undercurrent of discussion in order to first, ascertain what has been said concerning the importance of environmental justice and second, to discover how these arguments speak to the field of education. Third, applicable literature

which describes or highlights programs in higher education which are currently employing topics of environmental justice within curriculum will be cited.

A Review of the Literature

A Consensus of Importance

Beginning with what may be considered the most basic reason for considering environmental justice as an important national issue, Bullard and Johnson (2000) remind us that “despite significant improvements in environmental protection over the past several decades, millions of Americans continue to live in unsafe and unhealthy physical environments” (p. 555). This suggests that critical environmental justice work remains undone. In addition to Executive Order No. 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” and the 2010 Obama Administration initiative to reinvigorate a focus on environmental justice and to reconvene the Interagency Working Group on Environmental Justice, other efforts have been made. As part of this work, Gracia and Koh (2011) note that the United States government introduced the Healthy People 2020 initiative in 2011. While having a broader aim than simply environmental justice, they argue that this program does promote the development of both social and physical environments capable of fostering healthy living, a key ingredient in environmental justice. Making that connection, these authors maintain that “reaching this goal requires heightening and reaffirming a commitment to true environmental justice” (p. S14).

Additionally, at the federal level, there are other instances of an emphasis on environmental justice. The United States Department of Education’s Interagency

Working Group on Environmental Justice has drafted an environmental justice strategy document that sets out a roadmap for the agency to take action to address issues of the environment and human health that negatively impact achievement in low-income and minority student populations. Speaking as representatives of the Center for Tourism Research and Development at the University of Florida (Gainesville) and the Southern Research Station of the USDA Forest Service (Athens GA), Floyd and Johnson (2002) have posited that beyond simply meeting policy mandates concerning environmental justice in a recreation management context, understanding the dynamics of negative social and environmental impacts on minority and low-income populations helps their own agencies to deliver better services and create greater benefits, resulting in a better quality of life.

Work to promote environmental justice has not been limited to the federal government, Bonorris (2010) and Ong (2010) tell us that an abundance of policies and programs related to environmental justice have been drawn up and implemented at state and regional, as well as local levels. [For a complete listing of such programs see *Environmental Justice for All: A Fifty State Survey of Legislation, Policies and Cases* (4th ed.), edited by Steven Bonorris (2010)] For example, the South Coast Air Quality Management District (AQMD) (greater Los Angeles, CA region), as part of a project to better regulate toxic emissions from the dry-cleaning industry, particularly in low-income and minority neighborhoods where cleaning establishments were unable or less likely to adopt newer, less polluting technologies and chemicals, tapped into the California 1994 Air Toxic Control Measure (ATCM) to essentially achieve environmental justice. (Ong, 2010).

While programs that target environmental justice or act in support of the tenets of environmental justice demonstrate the importance which the national and state governments place on fair treatment of its citizens, Birnbaum, et al. make the point that federal [that is governmental] agencies cannot dictate [environmental justice] change or success. Because the causes and effects of environmental injustice are so intricately woven into the fabric of our communities, and even our cultures, it is impossible to address them without strong, full, and equivalent participation of the affected groups, researchers, and agencies seeking to understand and prevent or mitigate the effects (p. S487).

Likewise, these authors imply that while the agencies that act to apply and enforce environmental and social statutes to promote environmental justice cannot fully accomplish such a mission, neither can the codes and laws upon which their work rests. In other words, the injustice has roots in a complex web of factors (McLaren and Houston; Gruenewald, 2003) and requires a multi-participant, multi-pronged approach to address what Bullard and Johnson refer to as “the interconnectedness of different manifestations of racism” (p. 64). Although Birnbaum, et al. (2009) do not specifically mention educational institutions as agents of what they call change and success, it can be inferred that these would fall into their category of participating “groups, researchers, and agencies” (np).

Environmental Justice and Education

Knowledge and justice are not dichotomous, but complementary goals

(Cochran-Smith, et al., 2008, p. 636)

In an overview conducted by Reed and George (2011) it was demonstrated that while the number of scholarly articles published in the United States dealing with environmental justice increased in the years between 2000 and 2009, the conceptual and geographical scope of these publications broadened little beyond the traditional origins of the discipline, with most focusing on the ways in which environmental harms are distributed. In other words, this research seems to have frequently become mired in a sociospatial framework constructed around the discourses of traditional academics. But Bell (2004), a prominent educator well known in the field of the environment and environmental justice, tells us that environmental concerns are increasingly becoming political hot-button issues, suggesting that there is a need for an expansion of thought within the field.

Reed and George (2011) suggest that an antidote for the sociospatial stagnation within the field of environmental justice research may well lie in opening the doors and windows of this old framework, the narrow focus on the ways in which environmental harms are distributed, to allow new voices to participate in the debate. For instance, they suggest the inclusion of multiple disciplines such as indigenous methodologies and critical race theory. Additionally, Gracia and Koh (2011) have argued for an academic cross-disciplinary approach that allows the many voices held within these disciplines to join the conversation and the exchange of ideas.

Following that advice, multiple databases were searched using alternate search terms pertaining to schools, curriculum and education to determine what has been written about environmental justice and education. While this study focuses primarily on higher education, this limiting parameter was not applied in the literature review. Because K-12

and higher education can be in many senses thought of as a continuum, it was deemed important to find and understand what has been said in the literature in general about education and environmental justice. These databases yielded an appreciable number of authors who recognize both the importance of environmental justice and the role which education can play in promoting it. It yielded far fewer instances in which the verbalization of importance and the perceived role which education can play, have moved toward inclusion within higher education.

At the heart of this, is the notion that if we wish to control our future and the kinds of choices we have in that future, it is imperative that the education of those who will be its citizens be fashioned to create a citizenry best able to mold a just and livable world (Bell, 2004). In this regard, Jeanne Peloso, in a 2008 roundtable presentation to the Association of American Colleges and Universities, has succinctly stated that, “[e]nvironmental justice is an important component of social justice education [and] there is a need to include environmental justice education in all schools” (Slide 2). McLaren and Houston (2004) call inclusion a pressing reality that can no longer be ignored, one that must surpass the theme of recycling and the ubiquitous field trip into a wilderness area. Speaking from the perspective of health, an integral component of environmental justice, Gracia and Koh (2011) tell us that by expanding the field of health policy to include “*education*, housing, business, transportation, agriculture, and other areas traditionally outside the health sector” (my emphasis) (p. S15), that is, as others have suggested, recognizing the *interconnectedness* of multiple aspects of the social, political and physical world, the nation can begin to move toward a more environmentally just existence. Elaborating on this idea, Nwekethe et al. (2011) suggest that in order to

integrate environmental justice components into the development of regulatory policy, it is crucial that policymakers be informed by what they refer to as “actionable data” on inequalities in environmental health. In fact, the expansion and implementation of data such as this has been termed “necessary” to the functions of the Environmental Protection Agency (EPA) and the National Institute on Minority Health and Health Disparities (NIMHD) by Ruffin (2011). By implication this need suggests an integration of the tenets of environmental justice into the multiple fields of science (at a minimum), although as shown above, others such as Reynolds et al. (2010), advocate curricular integration in much broader ways.

Using a slightly different focus, others express worry that fragmentation and compartmentalization of subject matter within education precludes the ability to create the links, connections, and border-crossing necessary to integrate learning into a usable whole (Britzman, 1991). David Strangway, founder and CEO of Quest University, has accused 20th Century academia of becoming overly specialized. He suggests that severe concentration of course content makes understanding other academic disciplines difficult and suggests a more interdisciplinary approach (Stock, 2007). In this regard, Robinson (in Reynolds, et al., 2010) says

[E]nvironmental literacy—with its evocation of complex problems requiring sophisticated, multifaceted responses—lends itself to the exercise of new, collective means of teaching and learning...various ways of constructing useful disciplinary crossroads can be employed ... multidisciplinary ... interdisciplinary ... transdisciplinarity ... Students and faculty alike are

energized by the possibilities of moving beyond conventional departmental lines (pp.167-168).

There are hints that such partnerships are being forged in academia and slowly changing the face of science—because the focus, as Robinson has said is offer the best hope for answering some of the thorniest research subjects, including climate change, biodiversity, and cancer.

Likewise Renner (2004) expresses concern that within the school setting (both K-12 and higher education) there is a substantial lack of both knowledge and understanding concerning oppression generated by things like racism and poverty and that we live in a society politically structured to prioritize profit and productivity over a healthy environment for all. Further commenting on this, Brickhouse and Kittleson (2006) contend that the “unfettered marketplace and insatiable consumerism” (p. 192) generated in this sort of sociopolitical climate is deleterious not only to the environment and to human relationships, but also to the curriculum. But Anzagasty-Rodriquez (2006) identifies the teaching of environmental justice as being “valuable,” in particular for what he terms as the “repealing, challenging and demystifying [of] the capitalist production of nature and its apparatus of value coding concerning nature” (p. 103). Expanding this point Cole (2007), who teaches in a predominantly Hispanic area, asserts that the lens of her worldview has been distorted by her immersion in the middle-class, White institutions she grew up in and was educated in. While she does not delineate precisely what things might have gone into the construction of this worldview or what might have been omitted, it can be assumed from her continuing comments that her education did not include topics which would have helped her see the world through the lens of the

“other”—topics such as environmental justice. She concludes that the very teaching methodologies she uses and the content of her lessons are by nature of this biased climate, a reproduction of the culture in which she grew up in and was educated in. In this regard Cole says of her teaching, “Still something was missing. In the midst of our hip waders, maps, water quality testing equipment, and computers was an unanswered question of history, culture, politics, and power” (p.36). In other words, Cole had learned all the “right” ways to teach but was still missing a critical component.

A number of authors make a connection between environmental education and environmental justice. For instance, Cole (2007) states that “[e]nvironmental education has always included a subtext of socio-cultural issues” (p. 36) and Stapp et al. (1969) contend that environmental education has as its focus the direction and development of both citizen identity and student behavior. Certainly the Interagency Working Group on Environmental Justice is a high-profile representative within this group. They assert that environmental education can act to develop the skills of civic engagement and to highlight the interconnectedness among environmental, social, and economic systems. The goal of this type of education they state is to develop prepared citizens, capable of meeting the challenges of new threats to the environment *and to the equity of those that live in that environment*. Likewise, the goal is to fashion students who can go beyond simply being able to identify environmental right and wrong, to students who understand the *why* of the right and wrong (Kwong, 1997). But the consensus is that despite the notion that environmental education is interdisciplinary, and should encompass within its curriculum the tenets of environmental justice, it most often fails to do so, missing an

important opportunity to make the connection between imbalances of power and equity and resource depletion and environmental pollution (Locke, 2009).

The problem which arises in embedding issues of environmental justice within the science of the environment stems from environmental science's position within the curriculum and its almost exclusive focus on the *science* of the environment rather than the ways in which the environment is interconnected and dependent on multiple facets of the *sociopolitical* aspects of a community. Environmental education customarily takes the form of an add-on to the science curriculum (Hoody, 1995). But a number of authors assert that science is a co-construction with society and nature (Barad, 1996; Harding, 1991; Knorr-Cetina, 1999; Latour, 1987) and that "critical education [rightfully] includes an education in the substance of science, but also in its epistemologies and social relations" (Brickhouse and Kittleson, 2006, p. 204). Likewise, Capra (1975) has said that "[w]e cannot speak about nature without, at the same time, speaking about ourselves" (p.71). McKeown-Ice and Dendiger (2000) insist that by situating environmental education, the primary milieu in which environmental justice is introduced within the K-12 classroom (Kushmerick, et al., 2007) solely within a framework of science, the available research methodologies become limited to scientific content and a scientifically generated epistemology. Yet in pondering what the role of science should be and whether it should be "multicultural," Harding (1998) points out that the very strength which science is touted to possess and which supposedly has been responsible for its successes is its lack of a cultural fingerprint which gives it a universality capable of going beyond the cultural to generate a set of core "truths." In response, Rudy and Konefal (2007) remind us that environmental justice does not and cannot be limited to what might be

termed the “hard sciences.” Rather, environmental justice knits together the disciplines of nature, sociology, health, cultural studies, history, philosophy, theology, curriculum studies and literature with science in a unique way. Yet, complicating this discussion, Reed and George (2011), in looking at the research that acts as the foundation for curricular offerings, insist that “academics cannot come close to advocating successfully for environmental justice without justice in the distribution of research” (p. 841).

Continuing this discussion, Cole (2007) further criticizes as *dangerous* the exclusive use of science to build an academic body of knowledge, that is, by excluding how that body of knowledge is connected to power, inequity and the culture. However, McLaren and Houston (2004) charge that “the field of critical pedagogy is *bereft of a conscious ecological dimension* [and that] critical educators in the industrialized West have failed to address environmental issues in their work” (p. 28), thus implying that a fatal flaw, capable of greatly impacting environmental justice, exists within education itself. But in rebuttal to this pessimism, Brickhouse and Kittleson (2006) respond that rather than abandon a flawed science, it is better to reclaim it by reshaping it to fit the needs of eco-justice and social justice [environmental justice]. To accomplish this, they press for a curriculum that harnesses the muscle of science to solve issues of not only the environment but also environmental justice. Taking a more comprehensive view of how environmental justice should be approached in the educational setting, Peloso (2008) notes that “educators [play] a unique role [in] instilling a sense of environmental justice in their students” (Slide 11) and she pushes to include environmental justice concepts in not only scientific literacy, but also in the entire curriculum.

Escaping the Mire of Environmental Injustice through Education

The concept of social responsibility emerged strongly in the work of several authors. This responsibility entails a sense of duty on the part of the present generation to maintain justice, specifically environmental justice, for those generations which will follow. Delineating this idea of duty further, Bell (2004) insists that a society which considers itself as just is obligated to promote the virtues of environmentally ethical behavior to all citizens. Moreover, rather than leaving this duty to scientific or bureaucratic experts and elites, it belongs in the hands of educators. Haraway (1991), focusing specifically on science, claims that “science becomes the myth not of what escapes human agency and responsibility in a realm above the fray, but rather of *accountability and responsibility* for translations and solidarities linking the cacophonous visions and visionary voices that characterize the knowledges of the subjugated” (my emphasis) (p. 196). In a more concrete way, Latham, et al. zero in on the idea of the socially responsible engineer as being one whose education has prepared her to adopt and implement a systems approach to solving engineering problems by incorporating political, economic, regulatory, social, and short and long-term environmental concepts. To consider both the social and the environmental ramifications of an engineering action implies educating for social justice/environmental justice. Indeed, Latham, et al. go on to emphasize that students of engineering should possess a broad understanding of contemporary issues and be able to understand how their own engineering decisions may impact both the local and global social fabric. Likewise, it can be argued that college and university courses with a social justice orientation can serve as nodes of “democratization and contestation” (Ross, 2009, p. 517). Framing what both Latham and her colleagues

and Ross have emphasized in a somewhat more succinct way, Vanasupa, et al.(2006) say that curriculum must surpass a purely technical set of skills and be informed by a philosophy which supports the tenets of social responsibility.

The above arguments seem to support the notion that while textbooks, an omnipresent tool of education, can be considered *adequate* to transmit *general information and theory*, for instance in engineering, they often prove inadequate to present and foster discussion concerning the situation of the individual. On the other hand, curriculum theorists would take issue with the use of textbooks altogether precisely because as Sleeter and Grant (1991) assert, “*curriculum always represents somebody’s version of what constitutes knowledge and a legitimate worldview*” (p. 80). In this regard, curriculum theorist William Doll (1993) has stated concerning curriculum that “[p]lans arise from action and are modified through actions...., this translates into course syllabi or lesson plans written in a general, loose, somewhat indeterminate manner. As the course or lesson proceeds, specificity becomes more appropriate and is worked out conjointly- among teacher, students, text” (1993, p. 171). This approach then circumvents the use of textbooks which may be “soft” on issues of environmental justice.

Additionally, Frank (2002) and Gregorian (2004) have charged that the curricula of higher education, the very place where engineers and other professionals receive their education and training, is disjointed and fragmented. Moreover, a common mistake that lecturers make in course design and assignment construction is to *assume* that students will consider and include elements of ethical practice and social justice in their work (Reynolds and Brown, 2010). These curricular inadequacies, contend Viggiani, et al. (2005), suppress students’ ability to understand and to empathize with others in situations

divergent from their own. To rectify this deficiency, these authors advocate the construction of creative methods to teach not only content and theory, but also to teach understanding of those in divergent situations. On the other hand, Frank (2002) and Gregorian (2004) call for educational reform that emphasizes cohesiveness and connection within educational bodies of knowledge. That is, a focus on the ways in which the various parts of curriculum are interrelated rather than a focus on the individual parts (Senge, 1994). This type of education can be seen as capable of creating a just environment for all communities. This applies to those communities able to exert influence over their own future as well as those marginalized communities which for reasons of race and poverty cannot (Brickhouse and Kittleson, 2006).

Summing up what seems to be the corporate recommendation of these authors, Latham, et al.(2011) indicate that beyond simply instilling knowledge into their students, it is the duty of educators “to inspire a student body to be more socially and environmentally aware and responsible than their predecessors without sacrificing technical preparedness” (p. 445). Rudy and Konefal (2007) make a similar point in emphasizing that the real focus of curriculum is to assist students in re-conceptualizing the connection between nature and society, recognizing the inherent hybrid dynamic of ecological processes, politics, economics, science and cultural values. As Reynolds and Brown (2010) note, this process of reconceptualization is not instantaneous, and acquiring the ability to recognize instances of injustice, particularly within their own realm of existence takes time. Additionally, Cole (2007) reasserts the need for change and a rethinking and a restructuring of education and the curriculum to meet these challenges when she comments that “[a]n educator who is unwilling to reflect on

practice, restructure pedagogies, reinvent teacher identity, and improve opportunities for student learning is useless in furthering the field of education. In the same way, a stagnant discipline, unwilling to reflect, restructure and reimagine itself will not continue to thrive and evolve in relevant, useful ways” (p. 42).

Stepping toward the Goal

Putting Environmental Justice into Higher Education

As has been demonstrated thus far, where to locate environmental topics within the disciplines and certainly within the curriculum is not uniformly agreed upon. Multiple authors have pointed out that these topics do not always fit neatly into commonly held academic divisions. Likewise, where to place topics of environmental justice and under what general heading or headings it should be placed proves problematic. Indeed, research for this study required making what might be considered “anecdotal leaps of connection.” That is, because a number of disciplines can be seen to speak directly to the general principles and underpinnings of environmental justice, yet do not identify as such, the choice was made to allow authors writing in these disciplines to address and inform the literature review. For instance, although environmental education may be the most convenient or logical venue for the presentation of environmental justice concepts at the K-12 level, the topic does intersect directly with the tenets of social justice and placing environmental justice under its ethical umbrella may be the most logical fit for it within higher education.

Barry (2001) has said that “[a] good ‘general’ education cannot be a neutral education” (p. 221) implying that in order to be well-educated, one must be exposed to

not only the memorize-able facts but also to the social, political and economic issues that have fashioned them. In other words, the act of teaching entails far more than conveying knowledge and ways of thinking. Indeed, it forms the political self of the student—the student who will fashion the future of the planet she lives on (Cheng- Levine in Adamson, et al., 2002). Likewise, it works to stretch the “moral imagination,” that is, the students’ capabilities to tap into the moral experience, judgment and feelings of others, to recognize environmental inequities and to have the capacity to envision ways to make change (Figueroa, 2002). As a number of authors have noted, this entails moving beyond a purely science-based curriculum of what is popularly thought of as “environmental education” into education that integrates multiple disciplines into its curriculum.

Addressing how this can be perceived as a “messy” approach, Reed (in Adamson et al., 2002) points out that “pretending to isolate the environment from its necessary interrelation with society and culture has *severely limited the appeal* of environmental thought to the detriment of both the natural and social worlds” (my emphasis) (p.146). This is in part due to the secular/religious tension inherent in such border-crossing within the curriculum which at times generates discomfort as educators and students experience cognitive dissonance between what is being presented and what they have been taught in the past and what they believe to be true (Sideris in Reynolds et al.2010; Ross, 2009). Concurring with this assertion, Reynolds and Brown (2010) say that students often rely on pre-existing belief systems for guidance as they choose to accept or reject information presented in their college and university coursework. In this context, Greenberg (2006), thinking about how these pre-existing belief systems might impact learning focused on the environment and environmental justice, rues the fact that political and religious

conservatives often hold belief systems “indifferent or skeptical—if not polemically hostile—toward environmental concerns” (p.86). In spite of this, Reynolds and Brown (2010) make a strong case for the inclusion of environmental justice at all levels of education, and they further note that when the preservice teachers they work with *enter the classroom* with a desire to tackle issues of social justice, there is a much higher chance that they will do so in response to the inclusion of social justice in the curriculum.

Applegate (in Reynolds et al., 2010) however, has outlined four reasons why environmental justice must be given a prominent place in higher education. A synopsis of these reasons reveals that first, teaching environmental justice affords students an opportunity to make judgments about their own actions and the actions of others in an informed, ethical and analytical way. Second, it is important for students to understand societal dynamics that dictate that those who *have power* hold power over those who *do not hold power*. Furthermore, it is necessary to recognize that in order to be a society that is both just and sustainable, the rights and privileges of some cannot come at the expense of others. Third, personal and societal lifestyle/consumer choices have a direct impact on the engines of production which serve to generate conditions of environmental injustice. Fourth, even decisions concerning commitments to political and social involvement contribute positively or negatively to environmental justice. Adding weight to the importance embodied within the reasons for inclusion within higher education which Applegate has delineated, are the findings of Reynolds and Brown concerning preservice teachers. Their research indicates that without specific references to the ideals of social justice (using the assumption that this is an umbrella term which can include environmental justice) and unless assessment tasks directly pertain to issues of social

justice, the majority of students were incapable of recognizing and articulating unfair practices within their own schools, leaving them unable to address these practices in any meaningful way. Thus, these authors conclude that a curriculum which incorporates what they term “social justice education,” is instrumental and critical in preparing students to not only be activists, but to also prepare them to assess the social biases within pedagogical approaches and teaching materials they may encounter as educators.

Roadmaps, Examples and Applications

Thus far, the literature seems to demonstrate that first, there is a general consensus that environmental justice is an important topic, second that it should be included in education in some form, and third it needs to be incorporated into the curriculum of higher education. But at this point it is then appropriate to ask two questions: How might this be done? *and*, Are there examples in the academic literature of successful (or perhaps unsuccessful) applications of environmental justice curricula in institutions of high education ?

How might this be done?

Although the database search conducted in preparation for this research yielded an appreciable number of articles touting the importance of environmental justice and/or advocating for its inclusion in curriculum at multiple levels or simply “in education,” the literature discussing and delineating the mechanics of inclusion and execution were far fewer. Because the general themes of social justice, although broader in scope, are highly applicable to the field of environmental justice, the assumption was made that

environmental justice can be considered a form of social justice. In support of this Millner (2011) has argued that “[e]nvironmental justice is an important aspect of social justice” (p. 189), and others such as Baber (2009) and Reed (in Adamson et al., 2002) have tied the two together. Therefore, the search term “social justice” was also used and garnered a larger number of what were deemed to be applicable articles.

Using the assumption that environmental justice is a form of social justice, the articles found can prove, through extrapolation, to be helpful in constructing an initial framework from which to build an environmental justice curriculum. For instance, Bickmore (2008) emphasizes the components of guidance and of opportunities for students to have their voices heard, to listen to others and to participate in the dialogue of dissent and consensus-building. To support these activities the inclusion of a system of political, legal and civil protections which allow power sharing at all levels is considered a must by Wade (2008, in Levstick and Tyson). By implication then, education for social/environmental justice must deviate from traditional lecture-based teaching, and be student- and community-centered, multicultural, collaborative, activist-based, experiential, intellectual and critical. In addition, it must prepare students for roles as agents of change through a process of teaching about and for social/environmental justice. This necessitates teaching students to build bridges between the social justice theory they receive in the classroom and the ways in which the “real world” of school and community function (Reynolds and Brown, 2010). More specifically, McDonald (2008) charges the university with a responsibility to build programs which offer

(o)pportunities for teachers to consider how social structures such as race, racism, class and classism, shape the experience of individual students. Such...

programme[s] [sic] also would suggest that attending to justice within the classroom would require teachers to have skills for differentiating instruction based on their assessment of students' needs (p. 154).

Again, it can be seen that to teach in these ways requires a wholly novel approach, one that moves beyond the standard university lecture, the fragmented curriculum and the routine compartmentalization of subject matter.

Are there examples of successful applications of environmental justice curricula in institutions of high education?

As with literature pertaining to the form and mechanics of inclusion, the literature addressing implementations and applications often focused on social justice rather than environmental justice. Additionally this literature can be described as nothing more than sparse. While this lack may not fully reflect ongoing work in the classroom and in the field, it does speak to the fact that this work, whatever its volume, has not reached the stage of critical mass which would allow it to be self-replicating and self-reporting.

Within the field of environmental sociology there has been a significant shift toward curriculum that concentrates on environmental inequity. For instance, according to Scarce and Smith (1999), in 1991, few if any issues of environmental justice were included in the curriculum of environmental sociology. However, by 1999, most environmental sociology courses included a significant segment on environmental inequity. In addition, there were some courses wholly dedicated to the topic. In their 2010 article on sociology and social justice, Rudy and Konefal (2007) report that environmental justice has become a ubiquitous part of the environmental sociology

coursework, although they note that the bulk of what is taught remains focused on actual inequities and the movements which they have propelled into being rather than the historical development of these inequities and the social practices and politics that perpetuate them. Additionally they rue the fact that while the field has acted to pull issues of environmental justice into its nest, the pedagogy of environmental sociology has at times lagged well behind current research in the field indicating a need to work as Reynolds, et al. (2010) advocate, across the campus and across curriculum.

Certainly there are indications that other educational fields are interested in the ways in which the multiple facets of environmental justice inform their own work. Take as examples, critical geography, which often addresses how political and social spaces impact neighborhoods of color; environmental education which frequently makes the connection between its goals and those of environmental justice; and the multiple disciplines within the health and welfare fields that express keen awareness of how environmental justice impacts their work. However, as noted previously, the research which was conducted failed to glean a significant body of literature specifically directed at addressing how environmental justice is informing curriculum or how it is being embedded into higher education coursework.

Conclusion

An exploration of the literature reveals that while there is a growing body of research that considers the topic of environmental justice, there is a much smaller collection of literature that deals specifically with the intersection between environmental justice and education. Therefore, the decision was made to begin this research by

ascertaining what the perceived importance of environmental justice is within academia. This yielded a small but significant number of articles that indicated that the authors feel environmental justice is in some way an important topic. Again, many of these articles did not specifically address education, with most indicating important connections to the sociopolitical and health portions of academia. Reasoning that since environmental justice encompasses a broad spectrum of topics including sociology, geography, health, medicine, politics, parks and recreation, toxicology, and so forth, and that education also encompasses these same topics, it would be reasonable to assume that if environmental justice were deemed important in connection with any one field, it could be deemed important to education.

After establishing the importance of environmental justice in general, a closer inspection of what educators said about including aspects of environmental justice in curriculum was made. While the general consensus of the authors was favorable toward the teaching of environmental justice in the classroom, how this might be done seems less concrete. Environmental education has often been considered to be a logical venue in which to present environmental justice (Kushmerick et al., 2007), but a number of authors disagreed, or rather disagreed with its inclusion in the standard science curriculum, arguing that such an inclusion is too limiting. They see environmental justice as a border-crosser that cannot be fully addressed without discussing history, politics, law, race, gender and ethics. Additionally fragmentation within education and compartmentalization of subject matter runs counter to a full understanding of the multiple aspects of environmental justice.

Finally, believing that the most efficacious way to disseminate environmental justice literacy within both the educational system and the society at large is to include it broadly in the curriculum of higher education, an attempt was made to assess what is being said about environmental justice and higher education. As before, the field of available literature was greatly truncated, indicating a distinct lacuna which arguably needs to be filled.

CHAPTER 3

ENVIRONMENTAL JUSTICE: SURVEYING THE PRACTITIONERS

Introduction

The literature review presented in Chapter II demonstrates that environmental justice is routinely considered to be an important topic by an array of macro-level stakeholders and policymakers within the United States government, by researchers in the social sciences, and in particular by educators, yet it also reflects a gap between this verbalized importance and its practice through inclusion within higher education. Using as a foundation this insistence that incorporating environmental justice in education is critically important, and assuming that the importance thus placed stems from the belief that learning about this topic will in some way (or ways) enhance either general student learning, or the ethical self, the objective of this research is to investigate the apparent gap between the stated importance of environmental justice shown in the literature review and its practice and application by educators, specifically, college and university educators. This disconnection between the verbalized importance of environmental justice and the apparent lack of inclusion within higher education in general, raises several questions: 1) Are topics of environmental justice being included in the curriculum, yet remain undocumented? 2) If topics of environmental justice are being included in the curriculum, in what ways and for what reasons is this being done? 3) If topics of environmental justice are not being included in the curriculum of higher education, what factor or factors is this due to?

This study has been designed to initiate a search for answers to these questions. The term “initiate” has been specifically chosen in this situation because to fully investigate the inclusion of environmental justice in higher education within the United States is beyond the scope of the study. Therefore, limitations were placed on research conducted. However, it is important to point out that pursuing such expanded information is highly appropriate for future researchers.

To garner what appeared to be the most pertinent information concerning the inclusion of environmental justice in higher education, the first decision to be made was to focus on those departments within institutions of higher education that can be considered most closely aligned with topics of environmental education, the medium which according to Kushmerick et al. (2007) is most likely to carry topics of environmental justice within the K-12 milieu. While those in these departments may or may not become part of those teaching environmental education in the K-12 grades, the choice was made because of the specific nature of the education taking place in two departments: environmental science and environmental studies. Further limiting the study’s breadth, a second criterion was applied: only institutions of higher education offering BA and/or BS degrees in these fields would be included.

To answer the target questions [1) Are topics of environmental justice being included in the curriculum, yet remain undocumented? 2) If topics of environmental justice are being included in the curriculum, in what ways and for what reasons is this being done? 3) If topics of environmental justice are not being included in the curriculum of higher education, what factor or factors is this due to?] a questionnaire was developed. Specifically, it aims to discover what those teaching in departments of environmental

science and/or environmental studies know concerning environmental justice; what their attitudes are toward the topic; and if, how and why they include it in their own teaching.

A description of how this questionnaire was developed follows.

Assumptions, Research Question and Hypotheses

Based on the findings of the literature review, the initial framing of this research was crafted around the following set of assumptions which says that professors teaching in departments of environmental science/environmental studies in baccalaureate programs:

- 1) can identify what environmental justice is
- 2) have moderate, but incomplete knowledge of what the term environmental justice encompasses
- 3) generally support the ideas of environmental equality and fairness for all
- 4) have nominally favorable attitudes toward environmental justice
- 5) do not intentionally include topics of environmental justice in their courses
- 6) do not have adequate resources to include environmental justice in their curriculum
- 7) do not perceive the importance and necessity of including topics of environmental justice in their courses

From these assumptions:

- 1) a research question was created which asks: Is there any significant correlation between/among the knowledge, attitudes and practices of environmental justice as

well as the demographics of professors teaching in departments of environmental science/environmental studies in institutions of higher education?

- 2) a *Null Hypothesis (H_0)* was created which theorizes that: There is no statistically significant correlation between/among the knowledge, attitudes and practices of environmental justice as well as the demographics of professors teaching in departments of environmental science/environmental studies in institutions of higher education
- 3) an *Alternative Hypothesis (H_1)* was created which theorizes that: There is a statistically significant correlation between/among the knowledge, attitudes and practices of environmental justice as well as the demographics of professors teaching in departments of environmental science/environmental studies in institutions of higher education

Specific Aims and Objectives

The aims of this study are as follows:

- 1) to assess the knowledge, attitudes and practices (KAP) of environmental justice (EJ) within one segment of higher education—educators in the field of environmental science/environmental studies (ES)
- 2) to assess current inclusion of environmental justice (EJ) in the curriculum of ES
- 3) to analyze these findings
- 4) to apply a theoretical framework to the findings

The objectives of this study are as follows:

- 1) to demonstrate that environmental justice is considered to be an important topic

- 2) to determine what facilitates its inclusion in the curriculum of higher education
- 3) to determine what hinders its inclusion in the curriculum of higher education

Procedural Overview

To accomplish the aims and objectives of this study, five primary research tools were employed; each is expanded below.

The Literature Review

A literature review was conducted to determine two principal pieces of information:

- 1) what has been said in the literature concerning the importance of environmental justice in general
- 2) what has been written in the literature connecting environmental justice to higher education curriculum.

To address importance, particular attention was given to the inclusion of voices representing a broad spectrum of fields both within education and in non-academic areas such as government. Likewise, to address what is being said concerning environmental justice in higher education, all fields of academic study were considered; no limiting factors were applied other than inclusion in higher education.

Population Selection

While multiple areas of study could conceivably include issues of environmental justice in their curriculum, the decision to limit this study to a population of those teaching in the two related, yet somewhat differently focused, fields of *environmental*

science and environmental studies was made for several reasons. First, as the literature review has demonstrated, where the true curricular locus of environmental justice in education lies, is nebulous. On one hand, environmental justice is indeed a social and an ethical issue, yet it strongly connects to science in that it is a science which documents and describes the hazards, effects, movement, etc. of environmental risks within both living and non-living systems. Second, substantiating this connection, research on inclusion of environmental justice curriculum in the K-12 classroom (Gough, 1997; Kushmerick, et al., 2007) shows a strong link between a science-based environmental education curriculum and environmental justice. In other words, if issues of environmental justice are presented in the classroom the literature suggests that they are most likely to be embedded within environmental education, whether that environmental education falls under the curricular umbrella of science or social studies, or under a dedicated umbrella of environmental education. Therefore, taken together, environmental science and environmental studies seem to cast the widest possible net with which to gather data sets addressing environmental justice in higher education. Third, because no published research focusing specifically on the topic of environmental justice in higher education *in any field* was found, the thrust of the work can be seen, not as adding to or elaborating on a set of already existing knowledge, but rather as constructing a wholly new base of knowledge from which to initiate further study. Fourth, a full cataloging and analysis of an array of disciplines, while enlightening, would be a massive undertaking, one much larger than the scope of this research. Therefore, this dictates that the initial study must be limited in focus.

To create an appropriate population to survey the knowledge, attitudes and practices of those in departments of environmental science/environmental studies, the website *MyPlan.com* (<http://www.myplan.com/majors/environmental-science/colleges-that-offer-this-degree-03.0104.html>) was used to identify all colleges and universities in the United States which offer a baccalaureate degree in environmental science and/or environmental studies. This website is a comprehensive listing of accredited colleges and universities, both private and public, which allows the user to search for institutions offering certificate, undergraduate and graduate degrees by discipline.

To catalog and display information concerning colleges and universities offering baccalaureate degrees in environmental science and/or environmental studies, two tables were constructed from information obtained from the website of each college/university listed as offering a BA and/or BS in environmental science and/or environmental studies (see Appendix A Tables A-1 and A-2). This information includes 1) school name, 2) location, 3) contact information for all persons listed as teaching within the departments of environmental science and/or environmental studies (including e-mail, phone and title), and 4) course catalog link. These tables acted as resources as the study progressed.

Survey Tool Construction and Administration

Because little research has been conducted to date on the specific content of this study, no questionnaire template was found which closely matches its parameters.

Therefore, the questionnaire was specifically constructed for use in this study.

The construction was guided in four ways:

- 1) By consulting books published as guides to scholarly research-

- a) Crabtree & Miller (1992)
- b) Krathwohl & Smith (2005)
- c) Patton (1990)

Each of these books brought helpful aspects to the question construction table. For instance, Krathwohl and Smith (2005) make suggestions for framing research questions when the literature review yields little or no information about a topic, as the one for this study did in the area of inclusion of topics of environmental justice in the curriculum of higher education. Likewise, Crabtree and Miller (1992) were assistive in choosing the form of question construction by noting that “[t]he nature of the question/problem/event of interest allows one to make a judgment about what form of inquiry—quantitative or qualitative—is best suited for the investigation [being conducted]” (p. 34). In addition, Patton’s (1990) chapter on qualitative interviewing (Chapter 7, pp. 277-368) was especially useful in guiding the construction of open-ended questions.

- 2) By using multiple websites featuring applicable sample question sets-
 - a) <http://www.uj.ac.za/EN/Research/Statkon/Documents/Statkon%20Questionnaire%20Design.pdf> [Questionnaire Design-University of Johannesburg]
 - b) http://www.handicap-international.org.uk/Resources/Handicap%20International/PDF%20Documents/HI%20Associations/KAPRiskEducation_2009.pdf

[Knowledge, Attitudes and Practices for Risk Education: How to Implement KAP Surveys]

- c) http://www.stoptb.org/assets/documents/resources/publications/acsm/ACSM_KAP%20GUIDE.pdf [A Guide to Developing Knowledge, Attitude and Practice Surveys]
- d) <http://blog.vovici.com/blog/bid/18176/Demographic-Questions-Sample-Survey-Template> [Demographic Questions: Sample Survey Template]
- e) <http://faculty.newpaltz.edu/glenngeher/index.php/backgrounddemographic-questionnaire-example/> [Background/Demographic Questionnaire Example]

Websites proved very valuable in determining the format and content of the questionnaire. While no survey tool was found that specifically addresses environmental justice issues, the examples given in a-c above did act to inform the composition of a KAP (knowledge, attitudes and practices) questionnaire. In addition, the templates offered in the websites shown in d-e above were helpful in constructing meaningful demographic information.

- 3) By crafting and using a set of five general target questions designed to frame the specific issues of the study-
 - a) How knowledgeable are college and university educators about the term environmental justice?

- b) What are the attitudes held by college and university educators concerning environmental justice?
 - c) What perceptions or misperceptions do college and university educators hold concerning environmental justice?
 - d) Do college and university educators feel it is important to include environmental justice in higher education coursework?
 - e) What actions have these educators made or plan to make toward inclusion of environmental justice in their course curriculum?
- 4) By using the literature review, the research question, the null hypothesis and the alternate hypothesis as further guides to determining appropriate questions to glean the information desired

The questionnaire (see Appendix B) used a mixed methods approach with a set of quantitative questions designed to probe the knowledge, attitudes and practices of those teaching in departments of environmental science/environmental studies in institutions of higher education, as well as to establish the demographic characteristics of this population. Additionally, a smaller set of qualitative questions was designed to yield a more detailed and richer set of data for this population concerning their knowledge, attitudes and practices of environmental justice.

The quantitative portion of this study was designed to create a general national overview of environmental justice in higher education from the perspective of practitioners in the field of environmental science/environmental studies by assessing the knowledge, attitudes and practices of the respondents concerning environmental justice,

as well as their basic demographic information. After a discussion with the statistician engaged for this study, a goal of at least 100 respondents was set. Based on common responses to similarly constructed and presented questionnaires, this number was, by statistical standards considered to be a usable and attainable response rate. Using as a sample population all persons identified in the tables referred to above (Appendix A-Tables A-1 and A-2), an online questionnaire was distributed using the survey tool *SurveyMonkey* (<http://www.surveymonkey.com/>) (see Appendix B). All responses to this survey were received electronically.

The questionnaire created using the *SurveyMonkey* tool employs two basic question forms: the Likert Scale format and multiple choice style questions. Additional information sets (i.e. age, number of years teaching in higher education) not lending themselves to these two formats were quantified separately for presentation and analysis.

The quantitative question set was formulated to gain information in four general areas. These areas include the demographics, knowledge, attitudes, and practices of the responders. An effort was made to randomize the questions as much as possible within the parameters of the survey in order to, as Patton (1990) cautions, avoid content tediousness, and as Turner and Krauss (1978) suggest, to avoid influencing questions with the content of neighboring questions. Additionally, to circumvent what Krathwohl and Smith (2005) call “acquiescence” by respondents when presented with questions which ask for the “agree” response, the “not sure” and “I do not wish to answer this question” options were used. Additionally, respondents were directed in the instruction section to use the “not sure” option when unfamiliar with the topic or when unsure how to answer.

While it was realized that polling this population would not yield a fully accurate picture of the knowledge, attitudes and practices of that population (because of anticipated low response as reflected in the target number of respondents), it was anticipated that useful information concerning regional, racial and gender differences in perception of multiple issues, including those of an environmental nature would nevertheless be found. This belief is based on the work of a number of authors whose research suggests that there are regional, racial and gender differences in perception of multiple issues, including those of an environmental nature. In this regard, Sheppard (1995) found distinct racial differences in environmental attitude and worldview concerning the exploitation/stewardship of the environment, and Blocker and Eckberg (1989) emphatically state that “[i]n all, we *should* expect gender differences in environmental concern toward both local and general issues” (p. 588). Likewise, research conducted by Alm and Witt (1997) shows that “environmentalism [is] associated with such factors as state wealth, amount of federal aid states and localities receive, professionalism of state legislatures, political culture and ideology, partisanship, unemployment, industrialization, social diversity, degree of environmental degradation, and regionalism” (p.272).

From all respondents to the quantitative portion of this survey, a small sample was solicited to participate in a qualitative survey employing a set of open-ended questions. (see Appendix B) This tool was designed to uncover how this group of educators understands the concept of environmental justice, what educational importance the participants attribute to it, and how its concepts are integrated into their own teaching.

Because of the additional time needed to thoughtfully respond to this second set of questions a gift card (value of \$15) was offered to those completing the survey.

A draft of the questionnaire was piloted using a cohort of five educators representing different regions of the United States. Areas of concern identified by this group were addressed before administration to the entire population.

Analyzing the Findings

Quantitative Analysis

The goal of 100 respondents was exceeded and the quantitative data yielded from 206 respondents was analyzed in three different ways:

- 1) Using the basic statistical data provided by *SurveyMonkey* (i.e. numbers and percentages of respondents to each question as well as the demographic information), a narrative overview was created.
- 2) Using the beta option of *SurveyMonkey*, a set of bar graphs representing the above data in visual form was accessed and is presented in Appendix??)
- 3) All responses were compared and analyzed for significance using IBM® SPSS® Statistics. The data produced was placed in tables (see Appendix C Tables C-2). Results are presented in Chapter IV- Data Analysis.

Qualitative Analysis

Responses from the qualitative portion of the questionnaire were coded for thematic content using the editing analysis style (Crabtree and Miller, 1999). According to Crabtree and Miller (1999) the editing analysis style reflects a formal approach to

analysis which permits the identification of discrete response units and the reassembling of these units to demonstrate connections between and among the individual parts.

Additionally it enables other categories which emerge during the coding to be highlighted. Specifically the following format represents this method (see Appendix D Table D-1):

- 1) for each of the nine questions, participants' responses were placed in the "Response" column of the rubric
- 2) each response was then broken into a set of discrete responses and placed in the "Discrete Response" column (a discrete response was defined as a thought, idea or point which the responder has completed, regardless of length)
- 3) key words for each response were identified and placed in the "Key Words" column of the rubric
- 4) using an outlining technique developed specifically for the study (see Appendix D-Table D-1) categories were catalogued from the key words and placed in the "Categories" column
- 5) to check the validity of this work, an outside evaluator was engaged to appraise the accuracy of the "Key Words" and "Categories" entries and changes were made as deemed appropriate
- 6) the resulting thematic codes are listed by frequency in (see Appendix D-Table D-3)

Application of a Theoretical Framework

To both frame and propose the importance of the findings of this study, two theoretic models were applied: Vygotsky's constructivism and Lipps' notion of *Einfühlung* which Titchener (1909) has translated as *empathy*. In a nutshell, constructivism, in the sense which it has been used in this study, regards all learning as taking place within the framework of what has already been learned and experienced. That is, within this framework, personal meaning-making takes place—the new is interpreted in light of what is already known, and incorporated into a new co-construction with the old (Abbot, 2008). Likewise, the notion of *Einfühlung* carries the idea of meaning-making, yet in a different sense. While sympathy and empathy are frequently conflated (Jahoda 2005), Lipps came to see a nuanced difference, presenting his concept of *Einfühlung* as an act of participation with the other—literally “feeling into the other,” or knowing the condition of the other so directly that meaning is made. Implications of the application of these two theoretical frameworks are discussed in detail in the body of Chapter V— *Environmental Justice: Looking at the Findings, Making Conclusions and Proposing Further Research*.

CHAPTER 4

ENVIRONMENTAL JUSTICE: PARTICIPANT RESPONSES ANALYZED

Introduction

The principal focus of this research is to discover the knowledge, attitudes and practices of a specifically chosen group of those teaching in institutions of higher education—those within departments of environmental science or environmental studies in institutions within the United States that grant BA or BS degrees. To probe for applicable information, a series of questions was presented to the target population of slightly under 6,000. The total number of those opting to participate was 206. Most people contacted simply did not reply. However, gathering names and contacts from college and university websites proved not to be without error; a small number of persons responded that they do not teach in either of the departments focused on. Several responded that they no longer teach in the department or have retired, and a small number of e-mail addresses were no longer in service, perhaps because the person had moved on to another institution or related career. Finally, two schools, due to either an elaborate blocking system or a malfunctioning website, were un-reachable. The questionnaire consisted of three distinct parts: 1) a quantitative portion made up of sets of multiple choice and Likert format questions, 2) a demographics portion, and 3) a qualitative portion consisting of nine open-ended questions. In this chapter, each of the three sections is considered separately, with responses to each question in that section analyzed. Finally, the statistical analysis done to show correlation among/between the

demographic characteristics of the participants and the answers which they gave is presented.

The full questionnaire can be found in Appendix C.

Environmental Justice: Taking a Quantitative Look at Knowledge, Attitudes and Practices

Knowledge: Multiple Choice Format

I feel that I know what environmental justice is.

The majority of respondents self-reported that they know what environmental justice is, with 90.7% indicating that they either strongly agree, or agree with the question statement. This leaves 9.3% of participants either unwilling to answer the question (.6%) or to at least some extent less than strongly knowledgeable about the subject.

I learned about environmental justice (mark all that apply) (in my K-12 education, in my college/university courses, and/or other).

Reinforcing the assertions by Kushemerick et al. (2007) and Gough (1997) that there is little in the way of education toward environmental justice in the K-12 grades, only 7.4% of participants indicated that they had learned about environmental justice in the early years of their education. However, 72.8% said that they learned about the topic in their college education that . These findings lead to two further possible observations.

- 1) For those who do not attend college, formal education toward environmental justice appears to be very low, although this sample may or may not accurately represent the larger United States population.

2) While 90.7% of respondents reported that they feel they know about environmental justice, adding the number that learned about it in the K-12 grades to those that learned about it in their college years gives a total of only 80.2%, leaving 10.7% of respondents educated about the topic in neither the K-12 grades nor college. The answers which respondents gave in the “other” section of this question reveal that learning outside of the formal educational setting occurred in a number of related ways with many educators noting that they became familiar with environmental justice as a researcher, an educator in the field or through a process of self-education that involved reading, attending conferences and other professional endeavors.

From what sources, other than school, did you gain your knowledge about environmental justice? (mark all that apply) (television, newspapers/magazines/peer reviewed journals, lectures and presentations, books, colleagues and/or friends and acquaintances, blogs, social media (Facebook, Twitter, etc.); film/video, internet news, articles and web pages; personal experience; religious teachings, literature, etc.)

The most often cited sources of environmental justice knowledge were newspapers/magazines/ peer reviewed journals (76.9%); lectures and presentations (71.0%); books (69.8%); and colleagues or friends and acquaintances (66.9%). A second group of sources, while not as frequently mentioned, can be seen as being significant as well: film or video (39.6%); internet news, articles and web pages (45.0%); and personal experience (42.0%). Other categories, while given some mention, fell far short of these two primary sources of information about environmental justice. Most of these fall into

what might be thought of as more casual or less scholastic means of gaining information and include television (20.1%), blogs (12.4%) and social media (10.7%). Religious teachings, literature, etc., also ranked low as a source of information at 15.4%. However, since the majority of the professors polled in this study do not teach in religiously affiliated colleges/universities, this is not surprising and may actually represent an important source of information within some academic circles.

Environmental justice can be defined as unequal exposure to environmental hazards based on race, income, social class and/or place of residence.

The dominant reaction to this question fell within the strongly agree (33.9%) and agree (47.4%) ranges, giving a total of 81.3%. However, a small, but significant number of participants indicated disagreement (7.0%) or strong disagreement (5.8%) with the given definition, for a total of 12.8%. (More information concerning the specific nature of the disagreement which this small group of dissenters verbalized can be found in the qualitative portion of this study. (See below.)

At present I feel that I have adequate knowledge and understanding of environmental justice to teach a course which includes the topic.

Less than two thirds (62.6%) of those responding to this question rated their knowledge and understanding as adequate to teach a course which includes topics of environmental justice, with 31.6% strongly agreeing with the statement and 31.0% agreeing. The remaining participants were either unsure (10.5%) or did not believe themselves knowledgeable enough to teach such a course (disagree 18.1% and strongly

disagree 7.6%). These numbers appear to be at odds with those of the question which queried participants about their knowledge of what environmental justice is, which shows 90.7% of respondents confident in their knowledge. However, while the exact locus of the discrepancy was not tapped in this study, a plausible explanation is that while a high number feel that they know what the term environmental justice entails, and that it is important, they also know that being familiar with a topic and believing it to be important does not necessarily qualify one to teach that subject.

If you were asked to teach a course that focuses on environmental justice, which of the following published or on-line resources do you believe would be readily available?

There are no right or wrong answers to this question; it is constructed to gain knowledge about your perceptions of what is available. (mark all that apply) (textbooks, readers, prepared curriculum, lab manuals, guides to hands-on learning activities)

As stated, this question was chiefly crafted to ascertain the general *perceptions* of those teaching in the environmental science/environmental studies field concerning what materials may be available. However, by default it also accesses what is known to be available. In spite of this duality, 28.1% of those who answered this question were unsure of what materials, resources and aids are or may be available to facilitate teaching topics relating to environmental justice. A significant number of those responding named textbooks (52.6%) as being possible teaching resources. In hindsight, this question would have been more informative if the category of textbooks had been divided by focus. That is, allowing participants to differentiate between textbooks with a broad focus, such as might be used in a semester-long course, and textbooks dedicated solely to environmental

justice topics. Readers hold second place in what is perceived to be available with 48.5% naming them as a resource. A moderate number of those polled named two other sources: prepared curriculum (28.1%) and guides to hands-on learning activities (32.2%). Only 4.1% of respondents held the belief that lab manuals are available and could be employed to teach environmental justice.

Again, it is important to stress the general nature of this question. Most published textbooks are designed to cover a wide spectrum of topics relating to the general focus of the course to be taught and most likely do not cover any one topic, for instance environmental justice, in much depth. Likewise the other resources offered as options to the responders may or may not be strong sources of information for learning about environmental justice.

Knowledge: Likert Scale Format

The following questions were presented using a Likert scale format. The range of answer options were: “strongly agree,” “agree,” “not sure,” “disagree,” and “strongly disagree.” Although the percentage data for each category is presented in the report for each question, the “strongly agree” and “agree,” columns were combined to create a composite *agreement column*, and the “disagree” and “strongly disagree” columns were combined to create a composite *disagreement column*. This manipulation was implemented to facilitate the presentation and the understanding of the data. Each of the resulting composite percentages was rated for strength using the following scale:

low 0-33.4

moderate 33.5-66.7

high 66.8-100

To give a more complete picture of the findings, a “not sure” column was included to indicate what level of uncertainty each statement generated.

Environmental justice is related to the color of one’s skin.

Strongly agree (24.0%) + Agree (54.4%) = 78.4% [high]

Not sure (6.4%) [low]

Disagree (8.2%) + Strongly disagree (4.1%) = 12.3% [low]

Environmental justice is related to one’s level of income.

Strongly agree (40.9%) + Agree (46.8%) = 87.7% [high]

Not sure (5.3%) [low]

Disagree (3.5%) + Strongly disagree (.6%) = 4.1% [low]

Environmental justice is both an urban and a rural problem.

Strongly agree (51.5%) + Agree (42.1%) = 93.6% [high]

Not sure (3.5%) [low]

Disagree (1.2%) + Strongly disagree (0.0%) = 1.2% [low]

Environmental justice is related to where one lives.

Strongly agree (41.5%) + Agree (48.0%) = 89.5% [high]

Not sure (3.5%) [low]

Disagree (4.1%) + Strongly disagree (1.2%) = 5.3% [low]

The best predictor of level of exposure to environmental hazards is race.

Strongly agree (8.2%) + Agree (17.5%) = 25.7% [low]

Unsure (36.8) [moderate]

Disagree (25.7%) + Strongly disagree (8.2%) = 33.9% [moderate]

In an industrial society, all persons are equally exposed to environmental pollution and hazards.

Strongly agree (2.4%) + Agree (1.2%) = 3.6% [low]

Not sure (0.6%) [low]

Disagree (26.5%) + Strongly disagree (68.8%) = 95.3% [high]

In the United States there are inequalities in exposure to toxic substances based on socioeconomic status.

Strongly agree (64.1%) + Agree (30.6%) = 94.6% [high]

Not sure (0.0%) [low]

Disagree (2.4%) + Strongly disagree (2.4%) = 4.8% [low]

Issues of environmental justice are a kind of environmental racism.

Strongly agree (21.2%) + Agree (47.6%) = 68.8% [moderate]

Not sure (15.2%) [low]

Disagree (7.6%) + Strongly disagree (5.9%) = 13.5% [low]

In the United States there is unequal protection under the law when it comes to exposure to environmental pollution and hazards.

Strongly agree (20.6%) + Agree (33.5%) = 54.1% [moderate]

Not sure (22.4%) [low]

Disagree (15.9%) + Strongly disagree (6.5%) = 22.4% [low]

In the United States, people are unequally protected under the law when it comes to exposure to environmental pollution and hazards.

Strongly agree (24.0%) + Agree (38.6%) = 62.6% [moderate]

Not sure (18.1%) [low]

Disagree (11.7%) + Strongly disagree (5.3%) = 17.0% [low]

The lower one's income, the more likely one is to live in an area with high levels of pollution.

Strongly agree (39.8%) + Agree (50.3%) = 90.1% [high]

Not sure (4.1%) [low]

Disagree (4.1%) + Strongly disagree (1.2%) = 5.3% [low]

All branches of the government are, by law, responsible for environmental justice.

Strongly agree (18.7%) + Agree (33.9%) = 53.6% [moderate]

Not sure (24.6%) [low]

Disagree (18.1%) + Strongly disagree (2.3%) = 20.4% [low]

Comparing persons of color to those considered “white,” persons of color are more likely to live in polluted neighborhoods.

Strongly agree (24.1%) + Agree (54.7%) = 78.8% [high]

Not sure (11.2%) [low]

Disagree (8.2%) + Strongly disagree (1.2%) = 9.4% [low]

The incidences of cancer, asthma and other non-communicable diseases are approximately evenly distributed within neighborhoods in the United States.

Strongly agree (4.1%) + Agree (1.2%) = 5.3% [low]

Not sure (5.3%) [low]

Disagree (34.3%) + Strongly disagree (54.4%) = 88.7% [high]

Attitudes: Likert Scale Format

Irrespective of discipline, most college professors are knowledgeable about environmental justice.

Strongly agree (1.3%) + Agree (5.6%) = 6.9% [low]

Not sure (22.5%) [low]

Disagree (48.1%) + Strongly disagree (22.5%) = 70.6% [high]

Professors of science are usually well-informed and knowledgeable about environmental justice.

Strongly agree (0.6%) + Agree (10.6%) = 11.2% [low]

Not sure (21.3%) [low]

Disagree (47.5%) + Strongly disagree (20.0%) = 67.5% [high]

My colleagues are knowledgeable about environmental justice.

Strongly agree (8.8%) + Agree (40.0%) = 48.8% [moderate]

Not sure (23.8%) [low]

Disagree (21.3%) + Strongly disagree (6.3%) = 27.6% [low]

My colleagues include environmental justice in their curriculum.

Strongly agree (5.0%) + Agree (33.8%) = 38.8% [moderate]

Not sure (23.8%) [low]

Disagree (26.9%) + Strongly disagree (8.1%) = 35.0% [moderate]

Issues of environmental justice should be addressed in all higher education courses.

Strongly agree (10.0%) + Agree (20.6%) = 30.6% [low]

Not sure (12.5%) [low]

Disagree (42.5%) + Strongly disagree (14.4%) = 56.9% [moderate]

Issues of environmental justice can be addressed in all higher education courses.

Strongly agree (8.2%) + Agree (27.7%) = 36.9% [moderate]

Not sure (17.6%) [low]

Disagree (33.3%) + Strongly disagree (13.2%) = 46.5% [moderate]

For the most part, K-6 teachers are knowledgeable about environmental justice.

Strongly agree (0.6%) + Agree (0.0%) = 0.6% [low]

Not sure (37.7%) [low]

Disagree (29.6%) + Strongly disagree (32.1%) = 61.7% [moderate]

Topics related to environmental justice can be included in most college courses.

Strongly agree (5.6%) + Agree (33.8%) = 39.4% [moderate]

Not sure (20.0%) [low]

Disagree (31.3%) + Strongly disagree (8.8%) = 40.1% [moderate]

Introducing students to environmental justice issues and solutions should be one of the goals of higher education.

Strongly agree (16.3%) + Agree (50.6%) = 66.9% [high]

Not sure (10.6%) [low]

Disagree (18.1%) + Strongly disagree (3.8%) = 21.9% [low]

Most persons who hold a baccalaureate degree in any discipline can give a working definition of environmental justice.

Strongly agree (1.9%) + Agree (6.3%) = 8.2% [low]

Not sure (12.5%) [low]

Disagree (46.9%) + Strongly disagree (31.9%) = 78.8% [high]

Environmental justice should be part of the K-12 curriculum.

Strongly agree (18.1%) + Agree (56.9%) = 75.0% [high]

Not sure (13.8%) [low]

Disagree (8.9%) + Strongly disagree (2.5%) = 11.4% [low]

An environmental education curriculum includes topics of environmental justice.

Strongly agree (20.6%) + Agree (50.6%) = 71.2% [high]

Not sure (18.1%) [low]

Disagree (8.8%) + Strongly disagree (1.9%) = 10.7% [low]

For the most part, middle school and high school teachers are knowledgeable about environmental justice.

Strongly agree (0.6%) + Agree (0.6%) = 1.2% [low]

Not sure (41.0%) [moderate]

Disagree (37.5%) + Strongly disagree (19.4%) = 56.9% [moderate]

Irrespective of major, most college students are knowledgeable about environmental justice.

Strongly agree (0.6%) + Agree (2.5%) = 3.1% [low]

Not sure (13.1%) [low]

Disagree (53.8%) + Strongly disagree (30.0%) = 83.8% [high]

Most students studying in the field of environmental science/environmental studies can give a working definition of environmental justice.

Strongly agree (4.4%) + Agree (33.1%) = 37.5% [moderate]

Not sure (35.6%) [high]

Disagree (23.1%) + Strongly disagree (3.8%) = 26.9% [low]

Most persons who hold a baccalaureate degree in environmental science/environmental studies can give a working definition of environmental justice.

Strongly agree (4.4%) + Agree (45.6%) = 50% [high]

Not sure (30.6%) [low]

Disagree (13.8%) + Strongly disagree (5.6%) = 18.6% [low]

An effective way to tackle problems of environmental justice is through education.

Strongly agree (19.4%) + Agree (58.1%) = % [high]

Not sure (16.9%) [low]

Disagree (5.0%) + Strongly disagree (0.6%) = % [low]

I feel that it is important for Americans to live and act in environmentally just ways.

Strongly agree (53.5%) + Agree (42.1%) = 95.6% [high]

Not sure (1.9%) [low]

Disagree (0.6%) + Strongly disagree (1.3%) = 1.9% [low]

Even though white middle class Americans are not directly affected by issues of environmental justice, they are indirectly affected by them.

Strongly agree (33.8%) + Agree (45.0%) = 78.8% [high]

Not sure (8.8%) [low]

Disagree (3.8%) + Strongly disagree (4.4%) = 8.2% [low]

Solving problems of environmental justice is a pressing issue which our nation needs to address.

Strongly agree (33.8%) + Agree (52.5%) = 86.3% [high]

Not sure (8.8%) [low]

Disagree (3.8%) + Strongly disagree (1.3%) = 5.1% [low]

Making citizens aware of the problems, causes and solutions to issues of environmental justice is a pressing issue which our nation needs to address.

Strongly agree (30.6%) + Agree (51.3%) = 80.9% [high]

Not sure (9.4%) [low]

Disagree (6.9%) + Strongly disagree (1.9%) = 8.8% [low]

Most Americans feel it is important to know about environmental justice.

Strongly agree (0.0%) + Agree (3.1%) = 3.1% [low]

Not sure (20.0%) [low]

Disagree (55.0%) + Strongly disagree (21.9%) = 76.9% [high]

If asked about their personal actions, most Americans would see themselves as environmentally just.

Strongly agree (5.7%) + Agree (52.2%) = 57.9% [moderate]

Not sure (34.0%) [low]

Disagree (6.9%) + Strongly disagree (0.6%) = 7.5% [low]

Practices: Likert Scale Format

I discuss environmental justice with my students.

Frequently (34.6%)

Occasionally (48.7%)

Almost never (10.9%)

Never (3.8)

I intentionally include topics of environmental justice in my classroom.

Frequently (35.9%)

Occasionally (39.7%)

Almost never (16.0%)

Never (6.4%)

I include topics of environmental justice in my classroom as they arise.

Frequently (41.7%)

Occasionally (44.9%)

Almost never (5.8%)

Never (5.1%)

Attitudes: Multiple Choice Format

What is the PRIMARY reason you include environmental justice in your course(s)?

A small set of respondents either do not include topics of environmental justice in their coursework (9.7%) or did not wish to answer this question (3.2%), giving non-respondents a total of 12.9%. The remaining respondents chose from the listed options or selected “other” to add their own comment. At 24%, the option “to help students understand current issues” was the reason most often cited for inclusion, although other related options appear to have been strong choices as well: “it is something students should know” (18.8%); to encourage students to be socially and politically active (14.3%). For a number of participants (20.1%), a sense of personal passion impels inclusion. As one professor notes *it has been the focus of my research, teaching, and activism for the past 35 years*. Other reasons were marked for the remaining options as follows:

- It is an engaging topic which catches student interest (1.9%).
- It is a good way to teach problem solving and decision making skills (3.2%).
- It is included in the curriculum/textbook(s) which I use (3.9%).
- My institution encourages its inclusion (0.6%).

No participant chose the “my institution mandates its inclusion” option.

If you do not include topics of environmental justice in your courses, what is the PRIMARY reason that you do not?

A significant number (74.4%) of those participating indicated that they do include topics of environmental justice in their courses and moved on to the next question, while 6.8% declined to answer the question. The remaining responses, those who do not include topics of environmental justice in their courses, gave the following reasons for doing so:

- I am not familiar with the topic (6.0%).
- I do not feel it is an important topic (2.3%).
- It is not applicable to my subject area (8.3%).
- I lack teaching materials (textbooks, labs, etc.) (0.8%).
- I feel these issues are too controversial to include (1.5%).

The following options were not chosen by any participant:

- I am not permitted to teach about this issue (0.0%).
- My department or college/university does not encourage me to include this topic (0.0%).
- There is lack of student interest (0.0%).

If you include topics of environmental justice in your course(s), from what sources do you draw your teaching material? (mark all that apply)

Here, 9.2% of participants indicated that they do not include topics of environmental justice in their courses and proceeded to the next question. The remaining participants primarily made choices that did not include the option “published curriculum” which only garnered a score of 14.5%. Most often chosen (61.2%) was the

inclusive/undefined category of “other academic literature and/or publications.”

However, the following options were frequently chosen as well:

- Textbooks (42.8%)
- News coverage (54.6%)
- Internet sources (49.3%)
- Film and video (42.1%)
- My own experience (44.1%)

If you currently include topics of environmental justice in your course(s) or would like to do so in the future, IDEALLY, which of the following course-specific materials would you like to have for use?

A total of 10.6% did not answer this question (I do not currently include topics of environmental justice in my courses and would not be interested in teaching such a course in the future [7.3%] and I do not wish to answer this question [3.3%]). The desire to have case studies for use in the classroom emerged as the strongest of the choices at 74.8%, with professional peer-reviewed articles in second place at 64.9%. In order of popularity, the remaining choices rank as follows:

- Films and videos (55.0%)
- Field trip opportunities (53.6%)
- Guest lecturers (51.0%)
- Textbooks (35.1%)
- Readers (34.4%)

- Lab manuals (7.3%)

Two other possible resources were given in the “other” section: field projects and testimonials from activists.

If you include specific topics and/or examples such as case studies of environmental justice in your coursework, how is this material received by students? (mark all that apply)

As with similar questions, a small group noted that they do not include topics of environmental justice in their coursework (10.5%) with another 4.7% declining to participate for a total of 15.1% nonparticipation. Only 7.2% observed that students are not interested in topics of environmental justice, while 64.1% felt that their students showed interest and 47.1% said their students express interest in learning more about the subject. 39.2% find students surprised, 18.3% find students skeptical and 17.0% listed students as defensive. Of those responding, 14.4% cited student inability to make connections between their own actions and environmental justice as a student response. However, 41.2% noted the opposite, saying that their students were able to make connections between their own actions and environmental justice.

If you currently do, or were asked to teach a course focusing on environmental justice, which THREE of the following would you consider to be the most important student learning outcomes? (mark 3)

Nonparticipation for this question was 8.4%. Just over 50% of those participating (51.3%) named “students will be able to explain the connections between environmental

justice, poverty, race and health” as one of their three choices. Other choices ranked as follows:

- Students will be able to connect their own levels of consumption with the occurrence of environmental justice (42.9%).
- Students will be able to explain how race, poverty and environmental justice are connected to one another (37.0%).
- Students will be able to define the term environmental justice (35.7%).
- Students will know which populations are most adversely affected by environmental justice (24.0%).
- Students will become familiar with government policy and laws designed to protect all citizens (22.1%).
- Students will understand how corporate profit and loss impacts environmental justice (19.5%).
- Students will understand that the impacts of environmental justice ultimately affect the middle class and the wealthy in ways such as higher healthcare costs, polluted air and water, crime and taxation (16.2%).
- Students will be able to explain why living in polluted neighborhoods is not a lifestyle choice (14.3%).
- Students will understand that environmental justice is not only an urban problem, but can affect rural populations as well (13.6%).

If you were able to attend a workshop that would help you to include environmental justice in your coursework, or assist you in ongoing presentation of environmental justice in your coursework, it would include? (mark all that apply)

Nearly a quarter (23.7%) of those responding to this question indicated that they would not be interested in such a workshop and 5.1% did not wish to answer the question giving a nonparticipation score of 28.8%. The greatest portion of those who participated (54.5%) indicated that such a workshop would ideally include the “introduction to resources and materials that would help in constructing the curriculum for my course.” Second in popularity (41.7%) was the option “hands-on, in-person opportunities to learn about effective, community-led responses that address environmental justice.” Next in importance were two options which were nearly tied: “networking opportunities that allow peer-based exchanges about resources and methods that have proven to be successful in the classroom” (43.0%) and “hands-on, in-person opportunities to see and explore instances of environmental justice” (32.7%). Least desirable of the possible workshop topics was “basic information that helps me to become familiar with what environmental justice is” (19.9%).

I have encouraged my department to include environmental justice in its plan of study.

The most commonly supplied answer to this question involved some form of no: 37.4% responded with “no, never”; 3.2% said “no, I do not feel it is something my department should be involved in” and 14.2% answered “no, but I have considered doing so.” Negative responses totaled 41.8%. Positive answers (“yes, I have urged them to do so” [18.7%] and “yes, I have mentioned the idea” (14.8%)) yielded a total of 33.5%.

Demographics: Full questionnaire

In what department(s) do you teach? (mark all that apply)

A total of 5.8% opted out of participation for this question. Because respondents were directed to mark all departments in which they teach and because departments of environmental science and environmental studies are often interdisciplinary, a variety of answers in addition to the primary category of “environmental science/environmental studies” were offered. Additionally, participants supplied other departments in which they teach in the “other” option. As to be expected, “environmental science/environmental studies” topped the list with 73.2%. The cohort of biology, geology and geography made up the next most commonly mentioned departments with 15.9%, 13.8% and 12.3% respectively. Earth science at 8.0% and ethics at 5.1% were the least mentioned. Departments mentioned in the “other” section include communication, political science, civil engineering, Latin American and Latino Studies, sociology, mathematics, forestry, chemistry, agriculture and resource economics, environmental resources, Native American Studies, economics, law and environmental thought, anthropology, social sciences, humanities, religion, climate change and sustainability, history, urban and regional planning, science and technology, journalism, agriculture/aquaculture, fisheries and wildlife, environmental political theory and environmental law and management.

Are you a male/female/other?

- Male (52.6%)

- Female (44.2%)
- Other (0.0%)

Please provide the following information.

- The Zip Code for the city/town in which you teach (95.5% participation)
- The state in which you teach (99.4% participation)

Check the ONE option which best describes your race/ethnicity.

The overwhelming majority of those participating in this study (86.4%) identify as “Non-Hispanic White.” Remaining groups represented are:

- Multiple races/ethnicities (2.6%)
- Native American/Native Alaskan (1.9%)
- Hispanic/Latino (1.3%)
- Black/African American (0.6%)
- Native Hawaiian/other Pacific Islander (0.6%)

For this question, 6.5% chose not to give an answer.

What is your age?

The youngest participant in this study is 27 years old and the oldest is 80.

Age in Years	Number of Participants
25–29	1
30–34	16
35–39	21
40–44	13
45–49	15
50–54	29
55–59	24
60–64	20
65–69	10
70–74	1
75–79	0
80–84	1

Range: 53
Mean: 47.1
Median: 51
Mode: 61

For additional information see Appendix C Table C-2

What is your total household income?

Here, 14.2% of participants chose to keep their household income confidential. Income

levels were broken into the following groups:

- Less than \$10,000 (0.0%)
- \$10,000–\$19,999 (0.0%)
- \$20,000–\$29,999 (1.9%)
- \$30,000–\$39,999 (0.0%)
- \$40,000–\$49,999 (2.6%)
- \$50,000–\$59,999 (3.2%)
- \$60,000–\$69,999 (6.5%)
- \$70,000–\$79,999 (9.0%)

- \$80,000–\$80,999 (5.2%)
- \$90,000–\$90,999 (11.6%)
- **\$100,000–149,999 (26.5%)**
- \$150,000 or more (19.4%)

What is your marital status?

- Never married (3.3%)
- **Married (83.3%)**
- Divorced (6.7%)
- Separated (0.0%)
- Widowed (0.0%)
- Non-marital relationship (0.0%)
- Same-sex relationship (0.0%)
- I do not wish to answer this question (6.6%)

What is your political orientation?

- Very conservative (0.0%)
- Conservative (7.1%)
- Middle of the road (25.0%)
- **Liberal (35.7%)**
- Very liberal (25.0%)
- Apolitical (3.6%)

- I do not wish to answer this question (3.6%)
- Other (write in)
 - Independent green-Fabian
 - I don't think I fit in any of these, but am politically active
 - Very progressive/leftist

What is your religious affiliation?

- Christian/Catholic (10.0%)
- **Christian/other (33.3%)**
- Islamic (0.0%)
- Jewish (3.3%)
- Hindu (0.0%)
- Agnostic (10.0%)
- Atheist (13.3%)
- None (26.7%)
- I do not wish to answer this question (3.3%)
- Other (write in)
 - Quaker
 - Buddhist

What kind of area did you grow up in? (mark all that apply)

- Rural/country (26.7%)

- Small town (population less than 2000) (6.7%)
- Town (population greater than 2000) (30.0%)
- **Suburban (33.3%)**
- Urban/large city (20.0%)
- I do not wish to answer this question (0.0%)

What kind of area do you presently live in?

- Rural/country (10.0%)
- Small town (population less than 2000) (3.3%)
- **Town (population greater than 2000) (33.3%)**
- Suburban (26.7%)
- Urban/large city (26.7%)
- I do not wish to answer this question (0.0%)

What kind of area do you presently teach in?

- Rural/country (6.7%)
- Small town (population less than 2000) (0.0%)
- **Town (population greater than 2000) (43.3%)**
- Suburban (20.0%)
- Urban/large city (30.0%)
- I do not wish to answer this question (0.0%)

What kind(s) of area(s) have you taught in in the past? (mark all that apply)

- Rural/country (23.3%)
- Small town (population less than 2000) (10.0%)
- Town (population greater than 2000) (50.0%)
- Suburban (23.3%)
- **Urban/large city (60.0%)**
- Not applicable—I have always taught in the area in which I teach (3.3%)
- I do not wish to answer this question (0.0%)

How many years have you taught in higher education?

Using the table below, it can be seen that the number of participating professors in each of the five-year divisions varies, but that for three of these divisions, it is the same (1–5 years [24], 6–10 years [24] and 21–25 years [24]). Likewise, although not identical, the 16–20-year [17] and the 26–30-year [15] sectors are very similar. It is worthy to note that while the numbers of what may be thought of as seasoned professors in the 31–35-year [10] and 36–40-year [11] divisions continues to be robust, it also appears to reflect the loss of at least some to perhaps death, but more likely, retirement or other life choices.

Environmental Justice: Taking a Qualitative Look at Knowledge, Attitudes and Practices

Question #1-In your own words, please define the term environmental justice. Please be as specific as possible.

In the previous quantitative portion of the questionnaire a general working definition of environmental justice was provided. Question one then turned to the respondents for their own personal definition of the term. In essence, they could echo the given definition, amend it, add to it, or simply take it into any direction they wished, guided by their own understanding and their own worldview.

Responses varied widely. Some provided a personal meaning that closely aligned with the given definition. For instance, one responder wrote that *the term refers to perceived or actual inequities in degree of exposure to pollutants or other byproducts of human activities. These inequities are usually associated with lower economic status, lower political power, and sometimes associated with race.* Another widened the scope by identifying environmental justice as *the unequal distribution of pollution and toxic industrial residues and byproducts among geographic locations, communities and populations, usually more heavily impacting Native Americans and 1st Nations, minorities (Black and Hispanic), and rural poor whites.*

On the other hand, a number of respondents took issue with the given definition and took this space to criticize it as incorrect or too limited in scope. Some argued that what was defined was not environmental justice, but rather environmental *injustice*. As one participant explained, *environmental justice is the quest to eliminate the unequal burden of environmental risk on a nation's population. This survey conflated*

environmental justice with environmental equity and environmental racism, which are not the same things...the term being used (“justice”) was not what was meant. Justice is a goal; environmental racism and environmental inequity are the problems that one studies.

In spite of the broad spectrum of responses given, four themes strongly emerged from the replies. The first two themes can be thought of in terms of what several writers called “environmental goods and bads.” In considering the “bads” there was an overall agreement that environmental justice (or *injustice* as some argued) involves unequal exposure to and burden from environmental risk, pollution, hazards and toxic compounds. The second theme focused on an inequality of access to the social and physical benefits of the general society—that is, the “goods.” Such basic things as safety, protection, food equity and health and wellbeing were listed in this category. Likewise, the ability to enjoy amenities such as parks, nature centers, green space and quiet nature were all named as potentially unavailable for those affected by the concerns of environmental justice.

Accompanying the above issues are two (again) separate, yet related items—race and class. While many respondents mentioned race or race-related terms (*marginalized, ethnic, Black, Hispanic, Native American*) as factors which contribute to or are associated with inequality in the distribution of social and environmental goods and bads, class was almost as uniformly noted as a contributing factor. Indeed, the overlap is significant with marginalized racial groups occupying some of the lowest socioeconomic (class) rungs within the society. In this question, as well as in other parts of this study, it was also

noted that poor rural Whites, while not categorized within the above parameters, often fall under a similarly unjust environmental burden.

Question #2-What do you know about environmental justice?

The task of question two was to move past simply defining the term environmental justice as a textbook or governmental agency might do, and toward a more in-depth exploration of the participants' knowledge and attitudes about it. For instance, it was hoped that respondents would use this forum to elaborate on their perceptions of the causes, inner workings, realities and outcomes of environmentally unjust circumstances as well as what an environmentally just situation or society would look like.

In response to this question several persons merely attempted to quantify their knowledge with descriptors such as *a lot, little, the basics* and *a moderate amount on a casual basis*, while another participant made a comparison by saying *more than some people, but a lot less than the people who actively work on environmental justice issues*. This probe also elicited a revisiting of several of the themes from the first question—race, class and the unequal distribution of environmental and social “goods and bads”—with respondents noting that environmental justice issues impact the *economically disadvantaged, minorities* and *underserved* populations, and that the problems *cut across issues of race, societal standing, economics, and a wealth of other social issues*.

As seen in the previous question, there was a marked amount of emotion demonstrated in the responses given, with several persons pointing out what they perceived to be flaws in the actual or assumed omissions of certain points in the study's working definition of environmental justice. For instance, one response questioned the

apparent exclusion of the matter of access by persons of color to social/environmental goods such as *national parks and wilderness* areas, while also questioning the parameters of race and inclusion applied in the definition by citing the case of *asbestos poisoning of mostly white males from the mine in Libby, MT*. Additionally an argument was made for a conceptual expansion to include *refugees, women and other disadvantaged or at risk populations*. Another labeled the definition as *one very specific interpretation*. Finally, the credibility of the movement itself was challenged by charging that as a popular movement supported by advocacy groups, environmental justice fails to consider science in its work.

Two salient issues which this question served to identify however, are the multifaceted nature of environmental justice and its complexity. Respondents provided a variety of exemplars which they personally connected to environmental justice. Concerning the multifaceted nature of environmental justice, they penned such comments as *it is generally disregarded in favor of a robust economy*, and it has its origins in *industrial activities, primarily [created] by large corporations*. Additionally the notion of environmental injustices being driven by the economy, economics, and the dynamics of the market were mentioned. In reference to complexity, a respondent noted that the term can be a *social and political proxy for many other kinds of social injustices [sic]* and another explained that *environmental justice in its ideal sense cannot be realized. Put a dump in a rich neighborhood and the rich move away...their houses devalue tremendously and the middle-class or poor move in...now you are back to having the dump in a lower socioeconomic neighborhood. The only answer is to not produce waste and chemicals that increase risk. [But] as long as we prefer to live like we do, that won't*

happen. Relating to this conundrum one participant opined that these issues are largely invisible to persons living in the developed world while others raised the question of intent. They said there is not [a] consensus as to whether the unequal adverse impacts are the result of intentional discrimination or racism or other factors, and racism is difficult to prove because it relies on assumptions of bigotry, but the tangible evidence of the act is (usually) completely circumstantial.

Worth mentioning is one final topic that emerged from the responses. This is the issue of climate change. While it was mentioned only twice, what one person said is extremely poignant and seems to sum up the multiple concerns of environmental justice. *Climate change they say is the ultimate example, and in this case, the actions of Americans, regardless of race or income are harming the environment and future livelihood of peoples around the world. There are no innocents in America.*

Question #3-What populations are affected by environmental justice? In what ways? Give as much detail as possible.

Although somewhat redundant in focus, question three attempts to gain a more complete understanding of who the educators participating in this study *specifically* see as carrying the onus of environmental inequalities and injustices. Previously identified themes resurface as might be expected. However, several new strands materialized which provide greater insight into how environmental justice is seen and understood.

Reflecting the previous idea that race is one of the well-established factors associated with inequality of environmental impact, a number of commonly identified groups were listed: Black, Hispanic, Native American/First Nation and the general terms

of marginalized, minority, persons of color and oppressed. However, as one respondent firmly pointed out, it may not be the lone determiner of environmental inequality—

some of these questions seemed to assume that environmental justice is mostly about race. I think this is a mistake. Rural whites who have to work in sub-standard, dangerous workplaces and live in trailers and shacks, are suffering from environmental kind[s] of oppression. In our area, especially since the recession, the food banks can't keep up and the high price of heating oil has contributed to a lot more poverty, including child poverty. This drives people into dangerous, dirty jobs, and increases their exposure to toxic chemicals and other hazards.

Echoing this theme, others proffered a number of determiners based on one's socioeconomic status (that is class or the condition of poverty). These include membership in specific groups such as women, children, poor rural Whites and certain agricultural workers, as well as those within the more general categories of creed, ethnicity, religion and those who are weak.

Where one lives, that is location, was frequently some portion of the participants' responses. For instance it was noted that *Pacific Islands, river delta populations, and Africa are particularly vulnerable to [the injustice of] climate change* and that *toxic substances are also being exported from the US to 3rd world nations. It is no more just to dump these in another country [than] in the poor areas of the USA.* Further considering location, although not identified by all, the idea that issues of environmental justice can affect both urban and rural populations was woven through the answers to question three. As one person wrote *both urban and rural areas [have a] legacy [of] environmental*

pollution issues, which speaks not only of location, but also of the history of that location. For instance, *damage done by bankrupt corporations in the past* and *colonialism* (that is the legacy of past actions) were cited as factors contributing to environmental justice issues.

For a significant number of participants, the characteristic identified as common to all populations impacted by the social and environmental inequities inherent to the umbrella term of environmental justice, is a lack of power. This includes political power, or as one responder termed it, “*political capital*” as well as other types of influence. *Poorer populations cannot and do not complain about possible exposures. Or if they do complain they have less ability to affect [sic] change because they do not have the capital, knowledge or capacity to fight for enforcement of existing laws that should protect them.*

Thus far, a number of categories and groups have been specifically identified by the respondents as at risk for the negative impacts of environmental justice. This tracks closely with the definition provided within the questionnaire which states that “low income communities and communities of color, both urban and rural, are far more likely than white, middle/upper class communities to contain pollution-generating sites such as landfills, hazardous waste facilities, manufacturing and refining industries and the heavily contaminated and abandoned places of past industry (brown fields).” However, an appreciable number of persons who penned responses asserted that in fact, it is all persons/all populations which are affected by environmental justice, saying things such as *all populations [are affected], but to varying degrees and all populations are affected, either positively or negatively, by the environmental quality where they live, work, and*

recreate. One respondent however has successfully tied both notions together in writing that

everyone is affected by EJ [environmental justice], but the most direct effects in the US are felt by people of color and low-income (it would be more accurate to say that they are affected by environmental injustice). In general, people of color have been exposed to more toxic waste sites, more ambient air pollution, more pesticides, worse housing conditions, more pests, more lead paint and other such contaminants, than white Americans. People of color also have suffered poor access to political processes for environmental decision-making, and their environmental experiences and values have been mis-represented and undervalued by mainstream environmentalists.

Question #4-*In general, what do the students which you instruct know about environmental justice? Give examples if applicable.*

Most responses to this question reflect the idea that in the opinion of professors, students which they teach know little to nothing about environmental justice. The following are typical of what was said:

- *Nothing*
- *Very little. I doubt few if any could give a good working definition.*
- *Very little, if anything at all. Most have never even heard the term. This is true even of graduate students.*
- *Very little and this is especially disheartening in a poor state like New Mexico*

Some saw this lack of knowledge as an opportunity, saying things like *nothing to start with and very little until they take a course*. Others were far more pessimistic about the outcome. *Nothing*, one answer read. *They tend to start out believing that it doesn't exist, then transition to discomfort and guilt, and then to apathy. Some students hear that it exists and become deeply concerned, but are stymied by the complexity of the issue.*

Adding to this is the claim that students *don't quite see it* [environmental justice] *as an easy action item*. Another said of her/his students, *they tend not to know much. They tend to lack the personal desire to look into the living spaces of the marginalized populations.*

While the majority of professors saw their students as being uninformed about issues of environmental justice, four responders shared a generally more optimistic view. Of their students one said, *many know about environmental justice. Not all*. Another said *I think their views have been broadened, their confidence in understanding human interactions with Earth processes have [sic] been improved*, while the other maintained that students *are actually relatively well informed about the poor, due to Christian interest in ministries to the disadvantaged. Their knowledge of interaction between race and economics, etc. is weaker*. A fourth noted a lack of initial knowledge, but declared that *they readily make the transition when examples are presented to them*.

Although students were not judged to be well-versed about environmental justice per se, it was allowed that many do possess periphery or related knowledge. In this regard the following comments were offered:

- *Some have an awareness of watershed effects from nonpoint source pollution (dead zone in Gulf of Mexico as an extreme example).*

- *They don't know a lot. They may understand the concept of NIMBY's and how environmental justice is when you have something "in your backyard" that poisons you or your environment. They are very familiar with the issue of fracking because that exists in many of their communities.*
- *Students tend to think of this narrowly in terms of exposure to toxic materials. They don't typically think globally*
- *In general, students have a broad-brush, stereotypical understanding of EJ. They tend to assume that African-Americans are more exposed because they are poorer in general; they are much less aware of the continuing effects of racial segregation. They also tend to focus on quantifiable distributional injustices when they talk about EJ [environmental justice], and not so much on procedural and representational or symbolic injustices.*

Question #5-Should students know about environmental justice? Why or why not?

The professors polled have self-reported that on the whole they know an appreciable amount about environmental justice. On the other hand, they have indicated that overall, their students have low knowledge about the subject. Question five was designed to discover the perceived importance of changing levels of student knowledge. In other words, the question asks if students indeed should know about issues of environmental justice.

There was an overwhelming consensus by the responding participants that students should know about environmental justice. As the following example shows, some agreement was very enthusiastic. *Absolutely.* Wrote one person, *I believe that*

environmental education should be a part of all university curricula. Only one response indicated that it is unimportant.

Two general themes were evident in the reasons proffered for the importance of knowing. One theme cited the notion of students as citizens and their participation within the greater social fabric—that is citizenship. The second focused on the importance of students being literate about and/or aware of the world around them.

Responses concerning citizenship included a number of salient ideas. One responder noted that *as citizens of the world they [students] must [know about environmental justice] or we in such departments will have failed.* Others expanded this thought by referring to the responsibility which citizens have to be *sensitive...in both personal and professional capacities and to care for their neighbors.* Summing up the premise that students should be informed about environmental justice is what one respondent declared—*as part of being citizens, students should know about these issues. We, as responsible citizens, need to prioritize our tax dollars for all sorts of social justice reasons. If students do not know that environmental justice is an issue, then they can't make responsible, informed decisions.*

The idea of being literate and aware often meshed with the ideas of citizenship as participants articulated the importance of knowing *about the forces that affect our social structure and the health of our world* and that knowledge about environmental justice is foundational to *being policy [sic] and ethically literate in today's world.* Looking at the issue of being knowledgeable from a different perspective, one person made the point that it is critical for students to know about multiple facets of environmental justice in order to be able to *evaluate the claims made by advocacy groups,* while another suggested that to

be knowledgeable involves understanding *the multiple theories associated with the causes of unequal exposure and potential remedies,*

While ideas of citizenship and literacy were prominent in the responses to this question, one other reason why professors believe students should know about environmental justice emerged strongly. Repeated references were made to the need for students to both understand how their own actions impact others and how, as one respondent put it, how *all decisions made collectively have impacts on individuals.* Elaborating more on this thought the respondent went on to say that *when the impacts are disparate, creating “winners and losers” it is important for students to know that society can improve the position of the “losers” without undermining the effectiveness of the policy itself.* In regard to this, multiple references were made to the idea of who is on the giving and who is on the receiving end of social and environmental justice. *Many students measure themselves by how they are doing rather than how we (their society) are doing* noted one responder. As one participant insisted, *students need to understand power and privilege in society. Usually they have both and they need to know that some of their actions cause suffering in other people.* Another said *everyone is at either or both ends of the cause-effect line and should be aware of how their actions impact/interact with others.* Others used terms such as *excessive living standard, thoughtless consumption, greed and ignorance* to frame reasons why students should know about environmental justice.

Question #6-Should colleges/universities include topics of environmental justice in their coursework? Please explain your answer as fully as possible.

Comments were robustly in favor of including topics of environmental justice in the curriculum of colleges and universities. Indeed, of those who answered the question, all but one person was favorable to its inclusion. Basic “yes” answers were seen most frequently. However, there were some respondents who gave markedly enthusiastic answers such as *certainly!* And *absolutely!*

But, while overall support for including environmental justice in curriculum was high, reasons for inclusion varied. Likewise parameters and guidelines for inclusion were often specific and sometimes emotional.

Many of the comments seem to suggest a responsibility which colleges/universities and those who teach there have to students. Three comments seem to best sum up this notion of duty:

- *Colleges [and] universities have a responsibility in educating future leaders. These people have to know who gains and who loses when they use electricity, drive a car, and all the small actions that are seemingly innocuous, but have large environmental costs that disproportionately effect [sic] others.*
- *Offering a wide range of enlightening coursework should be what we're about. We should not be simply trying to train our students, but rather open their eyes and minds.*
- *A thorough knowledge of this issue is imperative in a liberal arts education.*

One important point which many of the educators made, in spite of agreeing that including environmental justice in the curriculum is important, was that there are

appropriate and inappropriate ways to do so. That is, there are some courses in which topics of environmental justice either do not belong or simply do not fit. As one answer tersely pointed out, *it is ridiculous to think that environmental justice should be taught across the university curriculum. It is an appropriate subject for some classes, but I don't see it in a seminar on Shakespeare or in a calculus class.* Another participant gave inclusion even narrower parameters when she/he declared that *it should be mentioned in classes dealing with economics and with environmental concerns. In most other classes, it would be added at the cost of information more important to that field. And since this is almost an unsolvable problem, spending too much time on it doesn't make sense.* Words most often used in conjunction with inclusion of environmental justice in the curriculum were *relevant, applicable* and *appropriate*.

Question #7-Do you include topics of environmental justice in your teaching? Why or why not? Give examples if applicable.

A majority of responders said they do include topics of environmental justice in their curriculum in some form, although several said they do not. The answers indicate however, that while educators were on the whole very favorable to inclusion of this topic in college/university curriculum (see question six), they were more reluctant to implement inclusion in major ways and in all courses taught. *Not unless it's brought up explicitly,* said one participant. *I sprinkle a small amount of this topic into relevant courses* said another. Others used limiting words such as *some courses* and *sometimes* to describe their own inclusion of environmental justice. In spite of this general trend, several reported complete inclusion or near complete inclusion. *I include it in virtually*

every course I teach, a participant enthusiastically reported, *even in general chemistry where I cover Climate Change and sometimes Acid Rain*. Another commented *I teach a whole course on it...and it is a major topic in my other courses, which are on human geography and health geography*.

Reasons for not including environmental justice in curriculum seemed to primarily revolve around the notion of “relevant/applicable/appropriate.” Citing this reason, some eagerly delineated inclusion in some courses and exclusion from others as the comment from one responder shows—*I happen to teach a class in environmental science. I include a unit on environmental justice and weave it throughout the semester. However, I do not even mention environmental justice when I am teaching cell and molecular processes in another course I regularly teach. Where would it fit—before transport proteins or after protein synthesis?* A second wrote that *the context depends on the topic; my greater coverage is in courses related to issues [of] environmental health or biological conservation*.

Examples of how professors incorporate environmental justice into curriculum can to some extent act to shed light on the types of courses deemed appropriate venues for inclusion. In some instances course titles were provided by those teaching them and include the following:

- *Environmental History*
- *Environmental Sociology*
- *Introduction to Environmental Studies*
- *Nature and Culture*
- *Religion and Environment*
- *Environmental management*
- *Environmental Toxicology*
- *Environmental Law*
- *Senior Seminar in Ethics*

- *Environmental Justice and US Policy*
- *Environmental Science (for majors and non-majors)*

In other instances only topics were provided and include the following:

- *Water and watershed issues*
- *Great Lakes issues*
- *USA's toxic air and...soil [studies]*
- *Land use issues*
- *Love Canal*
- *Planning and location of public services*
- *The Warren County, NC historical situation*
- *Sustainability*
- *Willingness to pay (WTP) [as a function of ability to pay]*
- *Slum life in places like Kibera, Kenya*
- *Balancing economic efficiency with equity*
- *How corporate...land grabs are displacing and in some cases killing the rural poor in places like Ethiopia and Mali*
- *Nonpoint source pollution's watershed effects on streams, rivers, lakes, and reservoirs (public and private water supply)*

Question #8-What *GENERAL* types of materials, if any, do you use to teach environmental justice? How are they used?

Those teaching in the college/university classroom employ various techniques to capture and hold the interest of their students and to convey critical concepts of the

subject being taught. Likewise, those participating in this study also use a variety of teaching materials and techniques. Several general categories stand out.

Reading was frequently mentioned as a way to transmit knowledge and understanding and took a multiplicity of forms. One responder was careful to delineate the use of primary literature, while others were less specific. Book and textbook readings were supplemented with other printed materials such as news articles, government documents, legislative and judicial reports, peer reviewed journals, case studies (a very popular inclusion) and various internet offerings such as university and organization websites.

For those who responded, the internet is a rich resource of teaching materials. In addition to those mentioned above, respondents reported using This American Life podcasts, TED Talks, YouTube videos and simulation games/case studies available on the web at <https://sites.google.com/site/reactingscience/home>. Using the internet in a different way, one respondent reported that she/he uses *moderated online discussions in which students must document their assertions with credible sources and respond to classmates' postings. Peer reviewed journal articles, university websites, and some environmental organizations' websites (eg Resources for the Future) are among the credible sources.*

Students are assigned writing tasks by the majority of those participating in the study. Reflective essays and research papers represent individual writing assignments. Taking this genre a step further, one professor reported that *small groups of students choos[e] a special topic within a broad assignment for designing, executing and reporting to the larger group.*

Finally, discussion plays a prominent role in a significant number of the responders' classrooms. While not specifically stated, it seems from the context that participants were suggesting that discussion would work to connect the other forms of learning mentioned above.

Question #9-*What do you see as your role in the classroom concerning environmental justice?*

That professors see themselves as a kind of guide emerged strongly in the comments for question nine, which asks what the participants see as their role in the classroom in regard to environmental justice. As an example, one responder sees her/himself as *a co-learner and guide*. Other responses were filled with action words to indicate this role. Words like fostering, facilitating, helping, linking, advocating and explaining peppered the replies. Indeed, one response seemed to hint at the idea of duty, with the respondent identifying their role as *leading by example—walking the proverbial walk*.

While the participants see themselves as active contributors in their students' education, their foci differed. Some saw exposing students to the concept of environmental justice as their role. *My role*, said one, *is to help students understand the concept and to appreciate different ways of thinking about it*, while another framed it as *alerting the students to this problem*.

Beyond these roles, a significant number of those responding noted the importance of assisting students to think critically about different aspects of environmental justice. *I try to walk a fine line of not telling them what to think but rather*

how to evaluate information, data, and biases one responder said. Another said, *my job is to get students to think for themselves*. Other examples include *open[ing] the notion of environmental justice to critical thinking*; *helping students to think critically about the tools or perspectives that we use to consider social, political, cultural and environmental problems*; *promoting open discussion with both sides evaluated*; and asking “*Have you considered this?*” or “*Have you seen what XX has to say about that conclusion?*” In this regard, one participant shared their approach by saying, *I try to get my science students to understand that we (scientists) need to ask more than if we can but if we should. That is not a question that science can answer, but it is a question that humans must consider. Environmental Justice is one frame in which questions like these can be answered.*

One interesting viewpoint was put forward when a respondent described their work as storytelling: *I aim to bring the stories of EJ communities to students in a variety of disciplines. I want students to understand the underlying drivers of environmental injustice and how privilege perpetuates environmental injustice. I want students to gain empathy with communities and see them not merely as victims but as potential agents in demanding justice for themselves.*

The themes of privilege, and the notion that students should become aware of their own part in creating and perpetuating environmental injustices, appeared a number of times. In this regard professors articulated their goals in the following ways:

- *I want to shine a light on the fact that their privileges directly correlate to someone else’s suffering, especially in regards to consumerism and energy consumption.*

- *I expose my students to the concept [of environmental justice], and I would like them to understand that our consumption [sic] behavior has consequences.*
- *To get students to think about the intended and unintended consequences of policy and the role that history plays in constraining opportunity. To give them opportunities to apply what they learned to affect positive change, to challenge assumptions built in to their world view based on their personal experiences, to give them opportunities to express creative problem solving and develop skills (like writing public comments, working in groups) that will allow them to use knowledge in ways that support their interests in sustainability and justice*

In addition to these things, two contributors see their role as calling students to action and/or service. One responder simply says of her/his role—*advocating action*.

Another fleshes this out more when they say

To give them opportunities to apply what they [students] learned to affect [sic] positive change, to challenge assumptions built in to [sic] their world view [sic] based on their personal experiences, to give them opportunities to express creative problem solving and develop skills (like writing public comments, working in groups) that will allow them to use knowledge in ways that support their interests in sustainability and justice.

Demographics: Qualitative questionnaire

In what department(s) do you teach? (mark all that apply)

Most persons who completed this portion of the survey placed themselves within departments of environmental science/environmental studies (77.8%). Biology and

geology each constituted less than 20% of respondents (18.6% and 14.8% respectively).

The remainder of departments represented are as follows: Earth science (11.1%),

Geography (11.1%) and Ethics (7.4%).

Are you a male/female/other?

As in the full study, more males (53.3%) participated than females (43.3%). There were no participants who identify as “other.”

Please provide the following information

In response to this question, 21 states were listed, while multiple Zip Codes within those states were recorded. Participant locations follow the general pattern of those in the general questionnaire. Below is the list of states represented.

State in which you teach

California	Maine	North Carolina
Colorado	Maryland	Ohio
Connecticut	Massachusetts	Oregon
Georgia	Michigan	Pennsylvania
Illinois	Missouri	Rhode Island
Indiana	New Mexico	Tennessee
Iowa	New York	Texas

Check the ONE option which best describes your race/ethnicity

No persons identifying as Native American/Native Alaskan, Native Hawaiian/other Pacific Islander, Black/African American, Hispanic/Latino(a), or of multiple races/ethnicities participated in this portion of the questionnaire. A small number (3.3%) chose not to answer, leaving Non-Hispanic Whites as the only responders at 96.7%.

What is your age?

Those in their 50's make up the largest group of qualitative respondents with just over one third of those participating. Next come those in their 60's with just under 25%, while the 30's and 40's came in at around 17%.

What is your total household income?

Income for this group lies decidedly at the upper end of the options given, with 40% marking the \$150,000 or more category. A second smaller income pocket lies in the range of \$70,000–\$79,999 (13.3%) and \$80,000–\$89,999 (10%) for a total in this group of 23.3% or approximately one fourth. 6.7% declined participation.

What is your marital status?

Those who have never married represent only 3.3% of participants. 6.7% have married, but since have divorced, leaving the majority presently married (83.3%). As with other questions, a handful of participants chose not to answer (6.6%).

What is your political orientation?

Conservatives represent the political minority in this portion of the questionnaire with (7.1%), while those considering themselves middle-of-the-road make up 25% of participants. The bulk of the remaining respondents identify as either liberal (35.7%) or very liberal (25%) for a total left of center of 60.7%. A small percentage is made up of those who claim to be apolitical or “other” or who did not respond.

What is your religious affiliation?

The Christian/other choice was marked most often (33.3%). However, the group of those who indicated no affiliation was a sizable 26.7%. Adding to these numbers were the agnostics at 10% and the atheists at 13.3%. Only 3.3% identify as Jewish, while write-ins in the “other” category included Quaker and Buddhist. 3.3% did not wish to divulge their religious affiliation.

What kind of area did you grow up in? (mark all that apply)

Approximately one third of the responders grew up in non-urban spaces, with the option “rural/country” marked 26.7% and “small town (population less than 2000)” marked 6.7%. Many marked “town (population greater than 2000) (30.0%) and suburban (33.3%) for a total within this middle group of 63.3%—nearly two thirds. Urban/large city areas were home to 20.0% of respondents.

What kind of area do you presently live in?

The majority of those participating in this portion of the study indicated that they live in towns (population greater than 2000) (33.3%), suburbs (27.7%) or urban/large city areas (26.7%). This leaves only 13.3% living in the less populated areas identified as rural/country or small town (population less than 2000).

What kind of area do you presently teach in?

As with the areas where participants live, the areas where they teach are also predominantly not rural or small town. The highest portion of respondents teach in towns of more than 2,000 (43.3%). The bulk of the remainder is composed of those teaching in suburban areas (20.0%) or urban/large city areas (30.0%)

What kind(s) of area(s) have you taught in in the past? (mark all that apply)

Almost a third of respondents indicate that they have taught in rural/country areas or small towns of less than 2,000 (23.3% and 10.0% respectively). One half of respondents say they have taught in towns of greater than 2,000 and 23.3% have taught in suburban colleges/universities. The largest percentage (60.0%) report that they have taught in urban/large city areas in the past. A small percentage (3.3%) have always taught in the area where they currently teach.

How many years have you taught in higher education?

Representing the largest cohort of those participating in this study, 41% have taught in higher education for 12–19 years. Approximately 21% of respondents fall

within the 2–5-year or the 20–27-year categories. 30–35-year veterans represent only 14%. One lone responder has taught for 40 years.

Table 4.2 Qualitative-Years of Teaching

0	2, 2, 5, 5, 5, 5
1	2, 2, 2, 2, 5, 5, 5, 5, 6, 8, 8, 9
2	0, 0, 3, 3, 5, 7
3	0, 1, 5, 5
4	0

Environmental Justice: Statistical Analysis-Correlations

The interplay between and among the elements of this study are complex and the possibilities for analysis are substantial. However, to best parse, compare and contrast these elements, a statistical comparison of the findings was obtained using IBM®SPSS® Statistics. A *Pearson product-moment correlation coefficient* (Pearson’s *r*) was computed to assess the strength of the relationship between each of the possible variables within the study. As an example, a Pearson’s *r* value was calculated for the relationship between those who rated themselves as politically conservative and their responses to the statement “The best predictor of level of exposure to environment hazards is race.” In this example then, based on the following table (Sprinthall, 2007), there is a small, but definite correlation between the two variables [$r = .312$, $n = 141$, $p = .000$]. Note that *r*-values range from -1 to +1, with -1 representing a perfect negative correlation and +1 representing a perfect positive correlation. As values approach 0 there is less correlation, with a value of 0 representing no correlation.

Table 4.3 Guilford's Suggested Interpretation for Values of r

r-Value	Interpretation
Less than .20	Slight; almost negligible relationship
.20-.40	Low correlation; definite but small relationship
.40-.70	Moderate correlation; substantial relationship
.70-.90	High correlation; marked relationship
.90-1.00	Very high correlation; very dependable relationship

Note: from Sprinthall (2007)

This process of calculating and assigning r -values was repeated for each of the elements within the questionnaire. A comprehensive overview of the findings is presented in Appendix C Table C-4.

Additionally, means tables were computed for political orientation, race, household income, marital status, religious orientation, area lived in, area currently teaching in and by state or Zip Code to allow question responses and demographic information to be compared. See Appendix C Table C-5.

Using the above tables, a number of the most important and interesting of these correlations are written up in detail below.

The primary focus of this study was to gain a general overview of the knowledge, attitudes and practices which participants have concerning environmental justice in higher education. Therefore, the questionnaire began by asking the participants to rate themselves on the foundational statement: *I feel I know what environmental justice is*. The rating scale allowed participants to choose one of these options: strongly agree, agree, not sure disagree, strongly disagree or I do not wish to answer this question. Analysis using Pearson's r , suggests that household income, marital status, religious orientation, area lived in, area teaching in, state of residence and Zip Code have no

relationship to the ways in which respondents answered. However, using the same evaluative mechanism, it can be seen that *political orientation* [$r = .234$, $n = 141$, $p = .005$] shows (see r value table above) a low correlation/definite but small relationship, while race [$r = .162$, $n = 147$, $p = .049$] shows a slight/ almost negligible relationship.

Considering the statement, *I feel I know what environmental justice is*, from the perspective of several of the key elements of this study, an examination of the mean values [M] (see Appendix C Table C-5) shows that as political orientation moves left (i.e., toward a more liberal outlook) respondents were more likely to rate themselves as knowledgeable about the term environmental justice. That is, those rating themselves “conservative” also rated themselves as the least knowledgeable [M = 3.75] and those rating themselves as “very liberal” likewise rated themselves as the most knowledgeable [M = 4.62].

Racially, a pronounced difference exists in the way in which participants responded to the question at hand. Again, by using the mean score to differentiate groups, persons of color (i.e., Native American/Native Alaskan [M = 5.0], Native Hawaiian/other Pacific Islander [M = 5.0], Black/African American [M = 5.0] and Hispanic/Latino(a) [M = 4.5]) appear to be markedly more knowledgeable about the term environmental justice than those in the “non-Hispanic White” group [M = 3.33] or the “multiple races/ethnicities group [M = 3.35].

While persons of color tend to see themselves as knowledgeable about environmental justice, they also tend to feel that most Americans do not consider knowledge of environmental justice as being important. Mean scores for the statement, *Most Americans feel it is important to know about environmental justice*, were

particularly low at 1.67 for Native American/Native Alaskan, 1.0 for Native Hawaiian/other Pacific Islander, 2.0 for Black/African American and 2.0 for Hispanic/Latino(a). However, non-Hispanic Whites were only slightly less pessimistic with a score of 2.04. Multiple race/ethnicity respondents were equally as pessimistic as groups of color.

A number of the questions and statements contained in the study questionnaire were specifically meant to probe for differences in perception along the rural to urban continuum. While differences can be noted in many of the answers, some stand out more than others. For instance, considering the statement, *Environmental justice is related to one's level of income*, as place of habitation moves from rural to urban, participants express greater agreement. The mean scores from those living in rural/country areas [3.86] and in small towns (population less than 2,000) [3.67] are somewhat lower than the mean of those living in towns with populations greater than 2,000 [4.04] and noticeably less than suburban and urban/city dwellers at 4.30 and 4.55 respectively. Similarly, those living in more population-dense areas were more likely to agree with the statement, *In the U. S. there are inequalities in exposure to toxic substances based on socioeconomic status*, than those living in more rural areas. However, when responses were analyzed for area in which respondents currently teach, these differences appear to be ameliorated, with mean scores being closer over the rural/urban continuum (rural/country [4.71], small town-population less than 2,000 [3.50], town-population greater than 2,000 [4.49], suburban [4.71] and urban/large city [4.49]).

Turning to the classroom, although some demographic characteristics appear to play a minor or occasional part in the attitudes and practices which professors bring to

their teaching, in this study, political orientation is the only demographic which somewhat consistently shows any degree of significance. However, that significance falls, without exception, in the slight/almost negligible relationship area. This observation is based on the r values of the following questions:

- 1) Introducing students to environmental justice, its causes and solutions should be one of the goals of higher education [.254].
- 2) Environmental justice should be part of the K-12 curriculum [.185].
- 3) Solving problems of environmental justice is a pressing issue which our nation needs to address [.221].
- 4) Making citizens aware of the problems, causes and solutions to environmental justice is an issue which our nation needs to address [.189].

Across the political spectrum, professors of science are perceived to be relatively informed and knowledgeable about environmental justice (conservative [M = 3.0], middle of the road [3.35] and liberal [3.24] until those that rate themselves as very liberal are considered. In this survey, this group presents itself as less confident in the knowledge held by those teaching science in higher education [M = 1.98].

Overall, the statistical data for this study does not show strong correlation tendencies for any combination of variables. Those that show the strongest correlation have been discussed above. Please refer to the tables in Appendix C for the remaining results.

CHAPTER 5

ENVIRONMENTAL JUSTICE: LOOKING AT THE FINDINGS, MAKING CONCLUSIONS, CONSIDERING THE IMPLICATIONS AND PROPOSING FURTHER RESEARCH

Research Goal

The research goals of this study were tri-fold. The first objective was to find what has been said in the literature concerning the inclusion of topics of environmental justice in higher education. The second was to assess the inclusion of environmental justice in the coursework of a segment of higher education (i.e., departments of environmental science and/or environmental studies within universities which grant BA/BS degrees and which are located in the United States. The final goal was to discover how the knowledge, attitudes and practices of those teaching in this setting impact its inclusion and presentation.

Significance of Study

It is important to consider why this study, which focuses on a particular aspect of social justice—environmental justice—is significant to academia. That is, why studying this particular topic adds depth to one’s education. This question is indeed pertinent in an era in which many institutions of higher education are being pressed to move away from their founding tenets of a broad education aimed at crafting a “whole person” and toward a more business-oriented model whose aim is primarily job training.

What appears to be at stake in this newer model of education is the perceived ethical danger that the university will create well-trained, job-ready and productive, yet unthinking and unethical automatons, ready for jobs that serve the new industrial heart of a globalized capitalism, but uneducated in the moral values of care for the “other” that both Noddings (1984) and Gilligan (1982) have so passionately spoken of. Indeed, this move, it has been asserted, removes the very soul from the university (Schrecker, 2010).

Although this image can perhaps be seen to represent an extreme, it also points to the need to be mindful that changes in the university have the potential to generate a multiplicity of changes within the society, one being the moral and ethical structure of the culture. Arguably, educating about and toward social justice in any form—that is, using education to attempt to accomplish a macro level ethic, one which proposes that students, citizens, governments, nations and corporations construct an ethical self is in many ways idealistic and impractical. Yet by abdicating the opportunity to do so, the society forfeits a piece of its civility. Shapiro and Takacs (2004) claim that this sort of education “nurtures students’ moral development in both their personal and professional lives” (243–244). Likewise, in an essay entitled “What is Education For?” Orr (1991) asserts that the “goal of education is not mastery of subject matter but mastery of one’s person.”

Methods

The literature indicates that while many voices proclaim that environmental justice is an important topic within society, and particularly in education, it also shows little evidence for its inclusion in the classroom and in the curriculum of higher

education. That is, it is either not included in any meaningful way or its inclusion is not being written into the academic literature.

Assuming that in most cases the professor is the primary curricular gatekeeper for individual courses taught at the college or university level, the research for this study focused on the knowledge, attitudes and practices of that group concerning environmental justice. For purposes of the study, this group was narrowed to include only those teaching in baccalaureate granting departments of environmental science or environmental studies. With little to act as a guide concerning where inclusion of topics of environmental justice might be taking place in higher education, inclusion in the K-12 classroom was used as a proxy. The journal literature does indicate that if issues of environmental justice are included at all at this educational level, they will most likely be found in the environmental education curriculum. Therefore, the focus of the research for this study became those teaching in departments of environmental science or environmental studies.

To frame and guide the research into the knowledge, attitudes and practices of professors in these departments, a set of seven assumptions was created which says that members of this group:

- 1) can identify what environmental justice is;
- 2) have moderate, but incomplete knowledge of what the term environmental justice encompasses;
- 3) generally support the ideas of environmental equality and fairness for all;
- 4) have nominally favorable attitudes toward environmental justice;
- 5) do not intentionally include topics of environmental justice in their courses;

- 6) do not have adequate resources to include environmental justice in their curriculum; and
- 7) do not perceive the importance and necessity of including topics of environmental justice in their courses.

Further, it was hypothesized that there is a statistically significant correlation between/among the knowledge, attitudes and practices of environmental justice as well as the demographics of professors teaching in departments of environmental science or environmental studies in institutions of higher education. An online questionnaire was used as a tool to determine the knowledge, attitudes and practices of those teaching in the targeted departments and to probe the correlations between/among this set of factors and the demographic attributes of this group.

Findings

Knowledge

The majority of respondents indicated high to moderate knowledge concerning the term environmental justice and, overall, participants understood and could articulate the basic foundational issues, problems and groups affected. However, both the quantitative and qualitative portions of the questionnaire indicated some misconceptions. In addition, the written responses indicated little consensus as to precisely what that term encompasses. There is, in fact, a disturbing confusion concerning exactly what the term environmental justice is and what it includes. For instance, some participants confined the issue to exposure to environmental hazards, pollutants and toxins in urban settings experienced by persons of color, while others expanded environmental justice to a much

broader field. This group mentioned access to green space; healthcare and safety; climate change; and unequal political power. This group also expanded those affected to include women, children, the unborn, poor whites, etc. Additionally, reflecting the ideas of the much broader and inclusive term *eco-justice*, some indicated that environmental justice should be applied to the wellbeing of the entire environment (including plants, animals, ecosystems, etc.).

Perhaps contributing to the confusion is that historically, as a dedicated social entity, the environmental justice movement is relatively young, having evolved from a loosely formed group of local activists in the early 1980s. At times it has joined forces with the civil rights movement and perhaps even been conflated with that movement and its issues. Moreover, nomenclature has shifted over time from environmental racism to environmental justice, a term which itself is problematic in that it is routinely used to describe both the actual movement to promote justice as well as multiple issues better described as *injustices*.

Attitudes

Overall the participants in this study were favorable to the tenets of environmental justice, although in differing degrees and ways. That is, most were not averse to discussing the topic in their classes, whether by dedicated inclusion in the course curriculum or as a serendipitous topic introduced by students or through lesson context. However, two somewhat related concerns were mentioned by the respondents as affecting favorable attitudes toward inclusion of topics of environmental justice in lectures and other classroom activities. The most-often mentioned factor was the

applicability of the topic to the course content. While a limited number of those providing written answers enthusiastically supported the notion that topics of environmental justice can be woven into all higher education coursework, most stopped short, citing the difficulties of doing so in certain courses. Additionally, several participants felt that the inclusion of what they considered to be extraneous or extra materials would detract from time spent focusing on the more important materials of the course itself.

An unexpected finding emerging from this research was the “hot button” nature of the topic of environmental justice in general. This was particularly evident in the answers given in the qualitative portion of the questionnaire. Although those providing responses in this section are not necessarily representative of all participants, or for that matter of the greater population of professors teaching in departments of environmental science or environmental studies, the anger and disagreement voiced is certainly worth noting. Several took issue with the definition of the term environmental justice as provided in the survey. Some felt it was not inclusive enough and others insisted that it defined environmental *injustice* rather than environmental justice, while several disagreed with the wording and other aspects of way the term was framed. In other instances, participants made accusatory comments about the nature of the study and the content of the questions, as well as the limited outlook and the education of the researcher.

It is difficult to parse the true source of these reactive and sometimes heated responses. Indeed, the topic of environmental justice is complex, involving government, politics, science, business, industry, health, education and our own habits of living and consuming. By its very nature then it incriminates us all, in that, as one respondent put it, *there are no innocents*. In addition, as any good researcher understands, those who

respond to surveys of this kind are motivated to do so for some reason. Those who either do not feel strongly about a subject or who do not have anything particular to say about that subject have less motivation to respond. Therefore, many of those responding to this questionnaire plausibly fall into the motivated category. Finally the online venue of this study possibly provided a feeling of anonymity and a safe space in which to make comments that would not have been made in a face-to-face interview or focus group.

A large number of those participating in the study chose not to answer a significant quantity of the questions; the significance of this is unknown, and may or may not be related to the apparent “hot button” nature of the topic of environmental justice. However, while reasons for not answering a question may vary, the large number of those doing so seems to indicate disagreement, anger or perhaps even a sort of disrespect—a statement of sorts concerning some aspect or aspects of the questionnaire.

Practices

Foundational to the practices of environmental justice demonstrated by those teaching in the departments considered in this study are the knowledge which professors hold about it and the attitudes which they have toward it. Thus, the findings within this section will be stitched together with those of the previous two sections to create a complete image of the practices which the participants in this study implement in the classroom using as a guide the set of assumptions crafted in the early stages of this study (see above for context). Each will be considered in turn and each can be assumed to be prefaced with the phrase “professors in departments of environmental science or environmental science...”

...can identify what environmental justice is. As demonstrated above, and in the body of this study, most of the respondents have this seminal piece of information and can describe basic concepts of environmental justice.

...have moderate, but incomplete knowledge of what the term environmental justice encompasses.... This assumption ties directly with the first and can be seen to align closely with the reality of this group. While most participants were able to name some environmentally unjust situations and were knowledgeable about those who might be affected by such conditions, few of the responses demonstrated a full understanding of the complex and far-reaching nature of what encompasses environmental justice.

...generally support the ideas of environmental equality and fairness for all.

Overall, participants exhibited an attitude of fairness, equality and justice for all. However, socioeconomically, the respondents are well-educated, predominantly non-Hispanic Whites in positions of academic privilege, whose worldview and situation may insulate them from the complexities and conundrums of social justice. As Lewis and James (1995) suggest, when those who develop curriculum, as professors are expected to do, are white and middle-class, the issues that affect minorities most may unintentionally be in danger of being misunderstood, overlooked and omitted. That is, White professors may be the least qualified to teach issues of environmental justice, yet as this study suggests, most teaching in departments of environmental science and environmental studies are white.

...have nominally favorable attitudes toward environmental justice. While none of the participants were blatantly opposed to environmental justice, responses indicating support for it fell across the spectrum, with the least supportive intoning that the topic is

not important and the most supportive expressing a high degree of enthusiasm for the ideology of environmental justice and for its inclusion in the curriculum of higher education.

...do not intentionally include topics of environmental justice in their courses.

Mirroring the previous findings, a moderate degree of inclusion was noted—more than expected at the outset of this study. However, the general expression of support for the principles of environmental justice voiced by the majority of participants, when paired with actual implementation by those same responders, presents a marked asymmetry. Perhaps the most often cited reason for not including topics pertaining to environmental justice in the course curriculum was applicability to subject being taught. As one person

quipped, I

happen to teach a class in environmental science. I include a unit on environmental justice and weave it throughout the semester. However, I do not even mention environmental justice when I am teaching cell and molecular processes in another course I regularly teach. Where would it fit—before transport proteins or after protein synthesis?

In spite of these findings, many of those responding noted that they do include environmental justice in at least some of their courses, if only nominally. However, several professors teach courses wholly or nearly wholly dedicated to topics of environmental justice while inclusion in other courses ranges from dedicated units on the subject to casual mention as the topic arises during presentation of materials or as students bring it up.

...do not have adequate resources to include environmental justice in their curriculum. Many of the responses indicate that when professors include environmental justice topics in their courses they rely on a mixed list of sources. (See Appendix C Table C-1 for a graph of materials used.) Although the technique of constructing curriculum from a number of sources is not unusual, the nature of the responses seems to indicate that to construct a broad curriculum for teaching environmental justice professors must use a technique that might be described as cobbling. That is, while many note that they use textbooks in their courses, it appears that most of these publications do not cover the topic of environmental justice sufficiently and must be supplemented if the topic is to be brought into the classroom. Additionally, the use of published curriculum (other than textbooks) was low, whether because it is unavailable or because the quality or focus of the material is not compatible with higher education.

Academic literature, the internet and case studies were frequently cited as resources. When professors participating in this study were asked what sources they would like to have or have more of, case studies was most often mentioned. Professional peer-reviewed articles were the second most desired resource. These findings point to the apparent need for more the generation and publishing of quality materials and studies dedicated to topics of environmental justice.

...do not perceive the importance and necessity of including topics of environmental justice in their courses. The perceived importance and necessity of including environmental justice topics in coursework seems to be generally moderate. Reasons given in the multiple choice section of the questionnaire ranged from the opportunistic (i.e., it is included in the curriculum/textbooks which I use), to the practical

(i.e., it is a good way to teach problem solving), to the pragmatic (i.e., to help students to understand current issues), and finally to the altruistic (i.e., to encourage students to be socially and politically active). In the written responses, many participants alluded to being knowledgeable about environmental justice as being part of citizenship and of being a good citizen.

In spite of the many good reasons proffered for the importance of environmental justice, the “necessity” portion of the above statement appears to have become lost, overgrown and tangled in a web of factors. First, the predominantly W.A.S.P. (white, Anglo-Saxon, Protestant) nature of this cohort of responders may create a biased perception of the severity of environmental injustices experienced by others. That is, one’s worldview is fashioned by one’s own life situation. Second, issues of environmental justice are in no way simple and both causes and solutions are extremely complex. For instance, moral and ethical teachings espouse doing what is right, but as one respondent opined, doing the right thing does not always yield justice. *Put a dump in a rich neighborhood and the rich move away...their houses devalue tremendously and the middle-class or poor move in...now you are back to having the dump in a lower socioeconomic neighborhood.* Further adding to the complexity is the very nature of the world which has been constructed over time. As this participant goes on to say, the human population has become fully embedded within this construction and escape is difficult if not impossible. *The only answer, they say, is to not produce waste and chemicals that increase risk. As long as we prefer to live like we do, that won’t happen.* A third encumbrance to the inclusion of environmental justice in curriculum in general is the question of exactly where it fits. As Kushmerick et al. (2007) have pointed out, its

complex nature, that is, its causes and solutions, connect it to many fields of study and teaching environmental justice in a vacuum obliterates the very connections which must be made in order to create a true understanding of these problems and the solutions.

The nature of the fourth difficulty may be best summed up by what one respondent said: *It should be mentioned in classes dealing with economics and with environmental concerns. In most other classes, it would be added at the cost of information more important to that field. And since this is almost an unsolvable problem, spending too much time on it doesn't make sense.* In the press to cover all the topics which seem essential to the coursework, adding yet another piece can be problematic. The fifth problem has been discussed briefly above, but is worth restating. While textbooks are designed to provide students with a broad overview of the topic or topics to be taught, they are not designed to cover the field in depth. Indeed, many textbooks suitable for use in departments of environmental science or environmental studies may mention or contain a small section on environmental justice, but fail to cover the topic in depth and fall short in making necessary connections between the problems, solution and other educational and social entities.

Applicability to Research Question and Hypothesis

To frame the focus of this study, a research question was written based on the assumptions presented above which says: Is there any significant correlation between/among the knowledge, attitudes and practices of environmental justice as well as the demographics of professors teaching in departments of environmental science/environmental studies in institutions of higher education? Likewise a null

hypothesis (H_0) was formulated which theorizes that: There is no statistically significant correlation between/among the knowledge, attitudes and practices of environmental justice as well as the demographics of professors teaching in departments of environmental science/environmental studies in institutions of higher education.

Complementing the null hypothesis is the alternative hypothesis (H_1) which theorizes that: There is a statistically significant correlation between/among the knowledge, attitudes and practices of environmental justice as well as the demographics of professors teaching in departments of environmental science/environmental studies in institutions of higher education.

While none of the correlation scores was found to exhibit a robust relationship between the demographics of the participants and their knowledge, attitudes and practices, nevertheless, based on the findings of this study, correlation can be demonstrated between/among the knowledge, attitudes and practices of those teaching in departments of environmental science and environmental studies and the demographic information garnered, with political orientation exerting the greatest influence on the participants' responses. Therefore, the null hypothesis (H_0) must be rejected and the alternative hypothesis (H_1) accepted.

Implications

The literature review done in preparation for this research clearly demonstrates that many persons in government, education and other areas of society view environmental justice as not only an important topic, but also as one that must be addressed. Yet this same research directly shows that topics of environmental justice are

not routinely taught in the K-12 grades and indirectly suggests, by its absence in the academic/peer reviewed literature associated with education, that it is not given much attention in higher education either. While this study has in some senses refuted the notion that topics of environmental justice are wholly absent in higher education, it nonetheless, raises several concerns.

First, this study was able to focus only on departments of environmental science and environmental studies at the baccalaureate level. This, although a meaningful first step in looking at environmental justice in higher education, leaves what may or may not be taught in other departments and in other types of programs unknown.

Second, while responses to the questionnaire clearly show that most of the participants are familiar with the term environmental justice, they sometimes hold what might be considered “stereotypical” or incomplete notions about the complex nature of environmental injustices. In addition, as noted earlier, there is a marked level of confusion as to precisely what environmental justice actually encompasses—is it only exposure to harmful substances in the air, soil and water, or does it also include access to green space, a safe environment, good education, healthcare and so on? In other words, environmental justice has an identity crisis.

Third, the majority of the respondents noted that their students know little to nothing about environmental justice when they enter the classroom. This reinforces what the literature seems to show—that environmental justice is not being introduced in the K-12 curriculum. Referring again to the reasons posited for this apparent omission at these grade levels, two primary reasons emerge: a) the topic does not seem to neatly fit any one of the separate subject headings assigned to the process of learning in those grades and b)

with the reliance on standardized tests as the sole measure of learning, there is little time during the school year for material which will not appear on these tests.

This exclusionary reasoning indicates first, a sort of continuous loop mentality in which preservice teachers are trained to see education not as a web of interconnections and ideas, but as the acquisition of discrete pieces of information, grouped into sets by topic. In turn, they must train their students in their own image or lose their jobs. As the loop replays, these students assume their adult roles with the same worldview as those who went through the educational system before them. Second, it signals a skewing of social priorities which places knowledge over understanding, meaning-making, problem-solving and, most egregiously, over an ethic of care and compassion. As Weaver (2010) charges, this reduces “humans to instrumental means incapable of creating anything except profits for things we call multinational corporations” (p. 30).

By implication, this lack of knowledge on the part of students of higher education also indicates that they are not being exposed to environmental justice in other courses taken at the college or university level. This then leaves those who do not study in departments likely to include environmental justice in their coursework, or who do not attend college at all (where topics of environmental justice may have a better chance of being introduced) with little knowledge about the subject. In other words, particularly for those who do not attend college, formal education toward environmental justice appears low. Using the somewhat incomplete numbers supplied by Taylor (2002), in the United States, approximately 40% of both those 55–64 and those 25–34 years of age hold some form of post-secondary degree. Although Taylor did not make figures for the population between these two age groups available, nor did he indicate the number of those in these

ranges who attended college but did not receive a degree, the trend suggests that those with the highest possibility of learning about environmental justice are less than 50% of the population. However, this study only looked at departments of environmental science and environmental studies. The level of inclusion of topics surrounding environmental justice in other departments may or may not be similar to those in the target departments.

Fourth, referring directly to some of the numbers found in this study, 90.7% of professors responding reported that they know about environmental justice. Adding the number of respondents that learned about it in the K-12 grades to those that learned about it in their college years gives a total of only 80.2%, leaving 10.7% of these educators who responded in this way, educated about the topic in neither their K-12 nor their college experiences. Many participants indicated that they became knowledgeable through some means other than formal education—for instance as a researcher, an educator in the field or through a process of self-education that involved reading, attending conferences and other professional endeavors. Those who do not attend college, although not totally devoid of opportunities for extracurricular learning, do not have as broad a scope of opportunity to learn about environmental justice as those who attend institutions of higher education.

An answer given in response to the query “*What do you see as your role in the classroom concerning environmental justice?*” speaks volumes about the spirit in which environmental justice should be presented in the classroom and is the fifth point in this series. *My role*, responded one professor, *is to educate students. I don’t want to shame them or alienate them, but I want to shine a light on the fact that their privileges directly correlate to someone else’s suffering, especially in regards to consumerism and energy*

consumption. Connecting with the idea that the goals of education are not the acquisition of fact and the demonstration of learning through tests, but rather the acquisition of concepts of interrelation and personal meaning-making and the demonstration of learning through creative thinking and problem-solving. Overlying these goals must be the acquisition of what Lipps referred to as *Ein* and the practice of what Gilligan (1982) and Noddings (1984) generally refer to as care ethics.

Curriculum Studies: How Do the Findings Fit?

Professors participating in this study marked a variety of resources which they use to introduce and teach topics of environmental justice. For instance, 54.6 % use news coverage, 49.3% use internet sources, 42.1% employ film and video and 44.1% draw on their own experience. Yet, to teach this highly interdisciplinary topic, 46.7% of participants say they rely in part on textbooks as a source of information about environmental justice for their students. This relatively high usage of textbooks, in fact the use of textbooks at all, can be seen as problematic for curriculum theorists. Using again as an example a quote from Chapter 2, Sleeter and Grant (1991) assert that, “curriculum [textbooks] always represents somebody’s version of what constitutes knowledge and a legitimate worldview” (p. 80). In other words, the textbook is good at what might be thought of as “siloeing.” That is, the textbook presents the free-floating facts in the enclosed space of a “silo,” but fails to guide or even allow the student to connect these facts to other pieces of learning, a process of individual meaning-making based on Vygotsky’s (Wispé, 1986) theories. Nor can the student develop a unique and personal worldview when that worldview is by necessity only constructed of

predetermined facts deemed to be proper and necessary to the worldview of the masses. Moreover, while Lipps' (1903) notion of *Einfühlung* (empathy...feeling into the condition or emotion of the other) in conjunction with Vygotsky's ideas can be a powerful theoretical tool to teach social justice of any kind, it cannot be built on a foundation of factoids. Rather, it calls on the individual to *imagine* the feelings, the emotions and the condition of the other in order to understand that person's physical, emotional and spiritual condition.

Likewise, if the other curricular building blocks referred to by the participants in this study are used merely to transmit factoids and not ideas for personal meaning-making and assimilation, they are no better than the ubiquitous classroom fixture of the textbook. For instance, the power of a film to act as "a window into reality" (Rony, 1996, p. 13) or "to bring the past and that which is culturally distant closer" (Rony, 1996, p. 9) is dampened if students are expected to gain only "fact" from its presentation. The same can be true of story. About stories, Coles (1989) says "as active listeners we give shape to what we hear, make over their stories into something of our own" (p. 19), but if students are expected only to recall the facts of these stories, the transformation of the story into something personal is lost. In the same sense, Weaver (2010) opines that "[w]hen we forget the openings enframings create, we dismiss the power of humans to construct reality and themselves in ways that lead to new possibilities" (p. 30)

Suggestions for Further Research

As with any good research, this study has generated additional questions and has suggested new areas to be explored. Below is a list of four topics which seem to stand out as highly desirable for further investigation.

- 1) A topic of immediate interest is an extension of the present study. A greater number of participants might yield a larger and more representative sample. Two suggested approaches to obtain this larger sample are a) expanding buy-in to the study through pre-questionnaire promotional materials and b) conducting in-person recruitment and interviews as opposed to an impersonal, online survey. The construction of an online survey such as the one used in this study is conducive to anonymity. Thus, participation is easily dismissed and answers are less complete and complex than those possible in a face-to-face interview. Additionally, an online survey does not allow the researcher to probe for more depth and richer answers through questioning.
- 2) A second topic of immediate interest is exploring the inclusion of environmental justice in higher education in departments other than environmental science and environmental studies. While topics of environmental justice can be seen to fit well into the coursework of these two departments, it may not be seen as applicable in other departments, or for that matter as important to know about. Therefore, expanding this research to other departments, in particular those that train educators would be valuable.
- 3) A concerted effort is needed to better define and delimit the term environmental justice. That is, at present, there is neither consensus as to the correct or

acceptable way in which to precisely define the term nor as to what it encompasses. As this research demonstrates, a broad swath of related topics was brought into the environmental justice nest by those responding, possibly creating the illusion that the topic is so vast that it is un-teachable.

- 4) Research into environmental justice curriculum-building through the application of theory is called for. For instance, using Vygotsky's (Wispé, 1986) assertion that students learn and make meaning of new material presented through or within the context of what they already know, a theory of interconnection could be applied to find areas of best fit for topics of environmental justice within the topics being taught. Other examples abound.

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APPENDIX A

COLLEGE AND UNIVERSITY DATA

A-1. Comprehensive List of Universities Offering a BA or BS in ES with Supplemental Information

See pocket on back page.

A-2. Comprehensive List of Those Teaching in Departments of ES

See pocket on back page.

A-3. Comprehensive List of Colleges and Universities Contacted or Invited to Participate in Study by City and State

College or University	City or Town	State
Abilene Christian University	Abilene	TX
Adrian College	Adrian	MI
Alaska Pacific University	Anchorage	AK
Albright College	Reading	PA
Allegheny College	Meadville	PA
Alverno College	Milwaukee	WI
Anna Maria College	Paxton	MA
Ashland University	Ashland	OH
Assumption College	Worcester	MA
Averett University	Danville	VA
Barnard College	New York	NY
Auburn University Main Campus	Auburn	AL
Barry University	Miami	FL
Baylor University	Waco	TX
Benedictine University	Lisle	IL
Berry College	Mt. Berry	GA
Bethel College	St. Paul	MN
Boston College	Chestnut Hill	MA
Briar Cliff University	Sioux City	IA
Bridgewater College	Bridgewater	VA
Brown University	Providence	RI
Buena Vista University	Storm Lake	IA
California Lutheran University	Thousand Oaks	CA
California State University, Chico	Chico	CA
California State University, Hayward	Hayward	CA

California State University, Long Beach	Long Beach	CA
California State University, Monterey Bay	Seaside	CA
California State University, Sacramento	Sacramento	CA
California State University, San Bernardino	San Bernardino	CA
California University of Pennsylvania	California	PA
Calvin College	Grand Rapids	MI
Canisius College	Buffalo	NY
Carroll College	Waukesha	WI
Carthage College	Kenosha	WI
Castleton State College	Castleton	VT
Catawba College	Salisbury	NC
Central Michigan University	Mt. Pleasant	MI
Central Washington University	Ellensburg	W
Chatham College	Pittsburgh	PA
Clafin University	Orangeburg	SC
California State University, San Bernardino	San Bernardino	CA
California University of Pennsylvania	California	PA
Calvin College	Grand Rapids	MI
Canisius College	Buffalo	NY
Carroll College	Waukesha	WI
Carthage College	Kenosha	WI
Castleton State College	Castleton	VT
Catawba College	Salisbury	NC
Central Michigan University	Mt. Pleasant	MI
Central Washington University	Ellensburg	W
Chatham College	Pittsburgh	PA
Clafin University	Orangeburg	SC
Clarion University of Pennsylvania	Clarion	PA
Clarkson University	Potsdam	NY
Cleveland State University	Cleveland	OH
Colby College	Waterville	ME
Colgate University	Hamilton	NY
Colorado College	Colorado Springs	CO
Columbia University in City of New York	New York	NY
Columbus State University	Columbus	GA
CUNY Medgar Evers College	Brooklyn	NY
CUNY Queens College	Queens	NY
David Lipscomb University	Nashville	TN
Florida A&M University (Agricultural & Mechanical)	Tallahassee	FL
Florida Institute of Technology, Melbourne	Melbourne	FL
Franklin and Marshall College	Lancaster	PA
Franklin Pierce College	Rindge	NH
Fresno Pacific University	Fresno	CA

Frostburg State University	Frostburg	MD
Gannon University	Erie	PA
Georgia College and State University	Milledgeville	GA
Goshen College	Goshen	IN
Hardin-Simmons University	Abilene	TX
Haskell Indian Nations University	Lawrence	KS
Hawaii Pacific University	Honolulu	HI
Heritage University	Toppenish	WA
Eureka College	Eureka	IL
Humboldt State University	Arcata	CA
Idaho State University	Pocatello	ID
Indiana University, Bloomington	Bloomington	IN
Iowa State University	Ames	IA
Ithaca College	Ithaca	NY
Johnson State College	Johnson	VT
Juniata College	Huntingdon	PA
Keuka College	Keuka Park	NY
Kings College	Wilkes-Barre	PA
Kutztown University of Pennsylvania	Kutztown	PA
La Salle University	Philadelphia	PA
Lake Erie College	Painesville	OH
Lake Superior State University	Sault Ste. Marie	MI
Lamar University	Beaumont	TX
Lander University	Greenwood	SC
Lehigh University	Bethlehem	PA
Lesley University	Cambridge	MA
Lewis University	Romeoville	IL
Lincoln Memorial University	Harrogate	TN
Lincoln University	Jefferson City	MO
Louisiana State Univ. and Ag. and Mech. College	Baton Rouge	LA
Louisiana Tech University	Ruston	LA
Lourdes College	Sylvania	OH
Loyola University, Chicago	Chicago	IL
Lynchburg College	Lynchburg	VA
Lyndon State College	Lyndonville	VT
Maharishi University of Management	Fairfield	IA
Marietta College	Marietta	OH
Marist College	Poughkeepsie	NY
Marshall University	Huntington	WV
Marylhurst University	Portland	OR
Maryville University of Saint Louis	St. Louis	MO
Meredith College	Raleigh	NC
Merrimack College	North Andover	MA

Mesa State College	Grand Junction	CO
Messiah College	Mechanicsburg	PA
Metropolitan State College of Denver	Denver	CO
Miami University, Oxford	Oxford	OH
Michigan State University	East Lansing	MI
Michigan Technological University	Houghton	MI
Midwestern State University	Wichita Falls	TX
Miles College	Fairfield	AL
Mills College	Oakland	CA
Minnesota State University, Mankato	Mankato	MN
Montana State University, Bozeman	Bozeman	MT
Moravian College and Theological Seminary	Bethlehem	PA
Mount Olive College	Mt. Olive	NC
Muhlenberg College	Allentown	PA
New England College	Henniker	NH
New Jersey Institute of Technology	Newark	NJ
New Mexico Institute of Mining and Technology	Socorro	NM
North Carolina Central University	Durham	NC
North Carolina State University at Raleigh	Raleigh	NC
North Carolina Wesleyan College	Rocky Mt.	NC
Northeastern State University	Tahlequah	OK
Northern Arizona University	Flagstaff	AZ
Northern Kentucky University	Highland Heights	KY
Northern Michigan University	Marguette	MI
Northwest College of the Assemblies of God	Kirkland	WA
Northwest Indian College	Bellingham	WA
Northwestern University	Evanston	IL
Norwich University	Northfield	VT
Nova Southeastern University	Ft. Lauderdale	FL
Oglala Lakota College	Kyle	SD
Olivet College	Olivet	MI
Oregon Institute of Technology	Klamath Falls	OR
Oregon State University	Corvallis	OR
Otterbein College	Westerville	OH
Pacific University	Forest Grove	OR
Paul Smiths College of Arts and Science	Brighton	NY
Pfeiffer University	Misenheimer	NC
Piedmont College	Demorest	GA
Pitzer College	Claremont	CA
Point Loma Nazarene University	San Diego	CA
Pomona College	Claremont	CA
Portland State University	Portland	OR
Prescott College	Prescott	AZ

Ramapo College of New Jersey	Mahwah	NJ
Randolph-Macon Woman's College	Lynchburg	VA
Regis University	Denver	CO
Rensselaer Polytechnic Institute	Troy	NY
Robert Morris University	Moon	PA
Rochester Institute of Technology	Rochester	NY
Rocky Mountain College	Billings	MT
Roger Williams University	Bristol	RI
Rutgers University, New Brunswick	New Brunswick	NJ
Rutgers University, Newark	Newark	NJ
Saint Bonaventure University	St. Bonaventure	NY
Saint Cloud State University	St. Cloud	MN
Saint Josephs College	Standish	ME
Saint Leo University	St. Leo	FL
Saint Michaels College	Colchester	VT
Saint Norbert College	De Pere	WI
Saint Vincent College	Latrobe	PA
Salisbury University	Salisbury	MD
Salish Kootenai College	Pablo	MT
San Francisco State University	San Francisco	CA
San Jose State University	San Jose	CA
Santa Clara University	Santa Clara	CA
Scripps College	Claremont	CA
Seattle University	Seattle	WA
Shorter College	Rome	GA
Sierra Nevada College	Crystal Bay	NV
Simmons College	Boston	MA
Simpson College	Indianola	IA
Sitting Bull College	Ft. Yates	ND
Skidmore College	Saratoga Springs	NY
Smith College	Northampton	MA
Sonoma State University	Rohnert Park	CA
Southwest Minnesota State University	Marshall	MN
Stephen F Austin State University	Nacogdoches	TX
Stetson University	DeLand	FL
Suffolk University	Boston	MA
SUNY College of Environmental Science and Forestry	Syracuse	NY
Sweet Briar College	Sweet Briar	VA
Taylor University, Upland	Upland	IN
Temple University	Philadelphia	PA
Texas A & M University	College Station	TX
Texas A & M University, Commerce	Commerce	TX
Texas A & M University, Corpus Christi	Corpus Christi	TX

Texas Christian University	Ft. Worth	TX
Texas State University, San Marcos	San Marcos	TX
Thiel College	Greenville	PA
Thomas More College	Crestview Hills	KY
Trinity College	Hartford	CT
Troy State University, Main Campus	Troy	AL
Tusculum College	Tusculum	TN
Tuskegee University	Tuskegee	AL
Unity College	Unity	ME
University of Arkansas Main Campus	Fayetteville	AK
University of California, Los Angeles	Los Angeles	CA
University of Houston, University Park	Houston	TX
University of Idaho	Moscow	ID
University of Illinois at Urbana-Champaign	Urbana	IL
University of Iowa	Iowa City	IA
University of Maine	Orono	ME
University of Maine at Farmington	Farmington	ME
University of Maryland, Baltimore County	Baltimore	MD
University of Massachusetts, Amherst	Amherst	MA
University of Michigan, Dearborn	Dearborn	MI
University of Michigan, Flint	Flint	MI
University of Missouri, Kansas City	Kansas city	MO
University of New England	Biddeford	ME
University of New Hampshire, Main Campus	Durham	NH
University of Houston, Clear Lake	Clear Lake	HI
University of New Mexico, Main Campus	Albuquerque	NM
University of North Carolina at Chapel Hill	Chapel Hill	NC
University of North Carolina at Pembroke	Pembroke	NC
University of North Carolina, Wilmington	Wilmington	NC
University of Northern Iowa	Cedar Falls	IA
University of Oklahoma Norman Campus	Norman	OK
University of Oregon	Eugene	OR
University of Pennsylvania	Philadelphia	PA
University of Portland	Portland	OR
University of Redlands	Redlands	CA
University of Rochester	Rochester	NY
University of Saint Francis, Ft Wayne	Ft. Wayne	IN
University of San Francisco	San Francisco	CA
University of Scranton	Scranton	PA
University of South Florida	Tampa	FL
University of Southern California	Los Angeles	CA
University of Southern Maine	Portland	ME
University of St Thomas	St. Paul	MN

University of Texas at Arlington	Arlington	TX
University of Texas at Brownsville	Brownsville	TX
University of Texas at El Paso	El Paso	TX
University of Texas at San Antonio	San Antonio	TX
University of Texas of The Permian Basin	Odessa	TX
University of the District of Columbia	Washington	DC
University of the Pacific	Stockton	CA
University of Toledo	Toledo	OH
University of Utah	Salt Lake City	UT
University of Vermont and State Agricultural College	Burlington	VT
University of Virginia, Main Campus	Charlottesville	VA
University of Washington, Bothell Campus	Bothell	WA
University of Washington, Seattle Campus	Seattle	WA
University of Washington, Tacoma Campus	Tacoma	WA
University of West Florida	Pensacola	FL
University of Wisconsin, Green Bay	Green Bay	WI
University of Wisconsin, Milwaukee	Milwaukee	WI
University of Wisconsin, River Falls	River Falls	WI
Valdosta State University	Valdosta	GA
Valparaiso University	Valparaiso	IN
Villanova University	Villanova	PA
Virginia Polytechnic Institute and State Univ.	Blacksburg	VA
Washington State University	Pullman	WA
Wayne State University	Detroit	MI
Wesleyan College	Macon	GA
West Texas A & M University	Canyon	TX
West Virginia Wesleyan College	Buckhannon	WV
Western Carolina University	Cullowhee	NC
Western State College of Colorado	Gunnison	CO
Western Washington University	Bellingham	WA
Westfield State College	Westfield	MA
Westminster College	Salt Lake City	UT
Wheaton College	Wheaton	IL
Widener University, Main Campus	Chester	PA

A-4. Comprehensive List of Home Cities and States of Respondents

City or Town	State	City or Town	State
Montgomery	AL	Lincoln	NE
Juneau	AK	Carson City	NV
Phoenix	AZ	Concord	NH
Little Rock	AR	Trenton	NJ
Sacramento	CA	Santa Fe	NM
Denver	CO	Albany	NY
Hartford	CT	Raleigh	NC
Dover	DE	Bismarck	ND
Tallahassee	FL	Columbus	OH
Atlanta	GA	Oklahoma City	OK
Honolulu	HI	Salem	OR
Boise	ID	Harrisburg	PA
Springfield	IL	Providence	RI
Indianapolis	IN	Columbia	SC
Des Moines	IA	Pierre	SD
Topeka	KS	Nashville	TN
Frankfort	KY	Austin	TX
Baton Rouge	LA	Salt Lake City	UT
Augusta	ME	Montpelier	VT
Annapolis	MD	Richmond	VA
Boston	MA	Olympia	WA
Lansing	MI	Charleston	WV
St. Paul	MN	Madison	WI
Jackson	MS	Cheyenne	WY
Jefferson City	MO	Washington	DC
Helena	MT		

APPENDIX B
QUESTIONNAIRE

B-1. Questionnaire

Thank you for your interest in this study. Your input is key to its success! Please take a moment to read the following information before you proceed.

Like you, many of your colleagues have been asked to participate in this study. To ensure the integrity and accuracy of the answers, please do not create any bias by discussing it with your colleagues.

This questionnaire is specifically designed to gain information about what those teaching in college and university departments of environmental science/environmental studies know about environmental justice and how topics of environmental justice are incorporated into higher education coursework. As a faculty member teaching in one or both of these departments, your input is extremely valuable. If you do not teach in one of these departments, please do not continue to the questionnaire.

Discomfort and risk for participants in this study are minimal, and all responses will be anonymous and confidential. Information gained from this questionnaire will be stored in a secure electronic file and all files will be erased three years after the completion of the study. You must be 18 years of age or older to participate in this study and be a faculty member teaching in a department of environmental science/environmental studies. Participation is voluntary and may be terminated at any time with no penalty. As a participant you have the right to ask questions at any time and to have them answered in a prompt manner. If you have questions about this study, please contact me or my faculty adviser. You will find our contact information below.

This project has been reviewed and approved by the GSU Institutional Review Board under tracking number H13293. For questions concerning your rights as a research participant, contact the Georgia Southern University Office of Research Services and Sponsored Programs at 912.478.0843.

Title of Project: Knowledge, Attitudes and Practices of Environmental Justice in Higher Education

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Before proceeding to the questionnaire, please indicate your consent to participate in this study by using the I agree/I disagree buttons provided below.

Thank you for your participation.
Marjorie M. Nussbaum

- I have read and agree to the terms of this study
- I have read and do not agree to the terms of this study

2. I feel that I know what environmental justice is.

- Strongly agree
- Agree
- Not sure
- Disagree
- Strongly disagree
- I do not wish to answer this question

3. I learned about environmental justice (mark all that apply)

- I am not knowledgeable about environmental justice (continue to next question).
- in my K-12 education
- in my college/university courses
- I do not wish to answer this question

Other (please specify)

4. From what sources, other than school, did you gain your knowledge about environmental justice? (mark all that apply)

- I am not knowledgeable about environmental justice (continue to next question).
- Television
- Newspapers/magazines/peer reviewed journals
- Lectures and presentations
- Books
- Colleagues and/or friends and acquaintances
- Blogs
- Social media (Facebook, Twitter, etc.)
- Film/video
- Internet news, articles and webpages

- Personal experience
- Religious teachings, literature, etc.
- Not sure
- I do not wish to answer this question

Other (please specify)

5. Environmental justice can be defined as unequal exposure to environmental hazards based on race, income, social class and/or place of residence.

- Strongly agree
- Agree
- Not sure
- Disagree
- Strongly disagree
- I do not wish to answer this question

6. At present I feel that I have adequate knowledge and understanding of environmental justice to teach a course which includes the topic.

- Strongly agree
- Agree
- Not sure
- Disagree
- Strongly disagree
- I do not wish to answer this question

7. If you were asked to teach a course that focuses on environmental justice, which of the following published or on-line resources do you believe would be readily available? There are no right or wrong answers to this question; it is constructed to gain knowledge about your perceptions of what is available. (mark all that apply)

- Textbooks
- Readers
- Prepared curriculum
- Lab manuals
- Guides to hands-on learning activities
- Not sure
- I do not wish to answer this question

8. As you read and consider the following statements mark your level of agreement/ disagreement with each. If you are uncertain, choose “Not sure.”

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	I do not wish to answer this question
Environmental justice is related to the color of one’s skin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental justice is related to one’s level of income	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental justice is both an urban and a rural problem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental justice is related to where one lives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The best predictor of level of exposure to environmental hazards is race	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. As you read and consider the following statements mark your level of agreement/ disagreement with each. If you are uncertain, choose “Not sure.”

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	I do not wish to answer this question
In an industrial society, all persons are equally exposed to environmental pollution and hazards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In the United States there are inequalities in exposure to toxic substances based on socioeconomic status	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Issues of environmental justice are a kind of environmental racism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In the United States there is unequal protection under the law when it comes to exposure to environmental pollution and hazards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. As you read and consider the following statements mark your level of agreement/disagreement with each. If you are uncertain, choose “Not sure.”

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	I do not wish to answer this question
In the United States, people are unequally protected under the law when it comes to exposure to environmental pollution and hazards	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
The lower one's income, the more likely one is to live in an area with high levels of pollution	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
All branches of the government are, by law, responsible for environmental justice	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Comparing persons of color to those considered "white," persons of color are more likely to live in polluted neighborhoods	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
The incidences of cancer, asthma and other non-communicable diseases are approximately evenly distributed within neighborhoods in the United States	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

Environmental justice looks at the uneven distribution of environmental hazards that occurs in society. Specifically, it focuses on the disproportionate distribution of and exposure to environmental pollutants, whether intentional or unintentional, based on the socioeconomic composition of communities. That is, low income communities and communities of color, both urban and rural, are far more likely than white, middle/upper class communities to contain pollution-generating sites such as landfills, hazardous waste facilities, manufacturing and refining industries and the heavily contaminated and abandoned places of past industry (brown fields). Not only is this an issue of negative aesthetics, but also one that negatively impacts the health of residents. For instance, documented studies show that low-income communities and communities of color (research has been focused primarily on Black, Hispanic and Native American communities) routinely have rates of cancer and asthma far higher than the national average as a direct outcome of unequal exposure to environmental hazards. The goals of the environmental justice movement are two-fold: 1) to bring attention to and remediate inequities in exposure to environmental hazards and 2) to create awareness of the causes and solutions to these problems by connecting them to personal actions and responsibility.

11. As you read and consider the following statements, mark your level of agreement/ disagreement with each. If you are uncertain, choose "Not sure."

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	I do not wish to answer this question
Irrespective of discipline, most college professors are knowledgeable about environmental justice	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Professors of science are usually well-informed and knowledgeable about environmental justice	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
My colleagues are knowledgeable about environmental justice	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
My colleagues include environmental justice in their curriculum	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Issues of environmental justice should be addressed in all higher education courses	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Issues of environmental justice can be addressed in all higher education courses	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
For the most part, K-6 teachers are knowledgeable about environmental justice	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

12. As you read and consider the following statements, mark your level of agreement/disagreement with each. If you are uncertain, choose "Not sure."

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	I do not wish to answer this question
Topics related to environmental justice can be included in most college courses	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Introducing students to environmental justice issues and solutions should be one of the goals of higher education	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Most persons who hold a baccalaureate degree in any discipline can give a working definition of environmental justice	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

13. As you read and consider the following statements, mark your level of agreement/disagreement with each. If you are uncertain, choose “Not sure.”

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	I do not wish to answer this question
Environmental justice should be part of the K-12 curriculum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An environmental education curriculum includes topics of environmental justice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For the most part, middle school and high school teachers are knowledgeable about environmental justice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Irrespective of major, most college students are knowledgeable about environmental justice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. As you read and consider the following statements, mark your level of agreement/disagreement with each. If you are uncertain, choose “Not sure.”

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	I do not wish to answer this question
Most students studying in the field of environmental science/studies can give a working definition of environmental justice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most persons who hold a baccalaureate degree in environmental science/studies can give a working definition of environmental justice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An effective way to tackle problems of environmental justice is through education.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that it is important for Americans to live and act in environmentally just ways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Even though white middle class Americans are not directly affected by issues of environmental justice, they are indirectly affected by them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	I do not wish to answer this question
Solving problems of environmental justice is a pressing issue which our nation needs to address	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. As you read and consider the following statements, mark your level of agreement/ disagreement with each. If you are uncertain, choose "Not sure."

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	I do not wish to answer this question
Making citizens aware of the problems, causes and solutions to issues of environmental justice is a pressing issue which our nation needs to address	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most Americans feel it is important to know about environmental justice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most Americans feel that environmental justice is important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If asked about their personal actions, most Americans would see themselves as environmentally just	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. How often do you do the following?

	Frequently	Occasionally	Almost Never	Never	I do not wish to answer this question
I discuss environmental justice with my students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I intentionally include topics of environmental justice in my classroom.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I include topics of environmental justice in my classroom as they arise.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. What is the PRIMARY reason you include environmental justice in your course(s)?

- I do not include environmental justice in any of my courses (continue to next question)

- To help students understand current issues
- To encourage students to be socially and politically active
- It is an engaging topic which catches student interest
- It is a good way to teach problem solving and decision-making skills
- it is something students should know
- It is personally important to me as a human being and an instructor
- My institution encourages its inclusion
- My institution mandates its inclusion
- It is included in the curriculum/textbook(s) which I use
- I do not wish to answer this question

Other (please specify)

18. If you do not include topics of environmental justice in your courses, what is the PRIMARY reason that you do not?

- I include environmental justice in my courses (continue to next question).
- I am not familiar with the topic
- I do not feel it is an important topic
- It is not applicable to my subject area
- I am not permitted to teach about this issue
- My department or college/university does not encourage me to include this topic
- I lack teaching materials (textbooks, labs, etc.)
- There is a lack of student interest
- I feel these issues are too controversial to include
- I do not wish to answer this question

Other (please specify)

19. If you include topics of environmental justice in your course(s), from what sources do you draw your teaching material? (mark all that apply).

- I do not include environmental justice in any of my courses (continue to next question).
- Textbooks
- Published curriculum
- Other academic literature and/or publications
- News coverage

- Internet sources
- Film and video
- My own experience

I do not wish to answer this question

Other (please specify)

20. If you currently include topics of environmental justice in your course(s) or would like to do so in the future, IDEALLY, which of the following course-specific materials would you like to have for use? (mark all that apply)

I do not currently include topics of environmental justice in my courses and would not be interested in teaching such a course in the future (continue to next question).

- Textbooks
- Lab manuals
- Case studies
- Films/videos
- Readers
- Professional, peer-reviewed articles
- Guest lecturers
- Field trip opportunities
- I do not wish to answer this question

Other (please specify)

21. If you include specific topics and/or examples such as case studies of environmental justice in your coursework, how is this material received by students? (mark all that apply)

- I do not include environmental justice in any of my courses (continue to next question).
- They are surprised
- They are skeptical
- They can make connections between their own actions and environmental justice
- They seem unable to make connections between their own actions and environmental justice
- They are defensive
- They express interest in learning more about the topic
- They show interest
- They do not seem to be interested

I do not wish to answer this question

22. If you currently do, or were asked to teach a course focusing on environmental justice, which THREE of the following would you consider to be the most important student learning outcomes? (Mark 3)

Students will be able to define the term environmental justice

Students will know which populations are most adversely affected by environmental justice

Students will be able to connect their own levels of consumption with the occurrence of environmental justice

Students will understand how corporate profit and loss impacts environmental justice

Students will understand that the impacts of environmental justice ultimately affect the middle class and the wealthy in ways such as higher healthcare costs, polluted air and water, crime and taxation.

Students will become familiar with government policy and laws designed to protect all citizens

Students will be able to explain why living in polluted neighborhoods is not a lifestyle choice

Students will be able to explain how race, poverty and environmental justice are connected to one another

Students will be able to explain the connections between environmental justice, poverty, race and health

Students will understand that environmental justice is not only an urban problem, but can affect rural populations as well

I do not wish to answer this question

23. If you were able to attend a workshop that would help you to include environmental justice in your coursework, or assist you in the ongoing presentation of environmental justice in your coursework, it would include (mark all that apply)

I would not be interested in attending such a workshop (continue to next question)

Basic information that helps me to become familiar with what environmental justice is

Hands-on, in-person opportunities to see and explore instances of environmental justice

Hands-on, in-person opportunities to learn about effective, community-led responses that address environmental justice

Introduction to resources and materials that would help in constructing the curriculum for my courses

Networking opportunities that allow peer-based exchanges about resources and methods that have proven to be successful in the classroom

I do not wish to answer this question

24. I have encouraged my department to include environmental justice in its plan of study.

- yes, I have urged them to do so
- yes, I have mentioned the idea
- no, but I have considered doing so
- no, never
- no, I do not feel it is something my department should be involved in
- I do not wish to answer this question

25. In what department(s) do you teach? (mark all that apply)

- Environmental science/environmental studies
- Biology
- Earth science
- Geology
- Geography
- Ethics
- I do not wish to answer this question

Other (please specify)

26. Are you a

- Female
- Male
- Other
- Prefer to not answer

27. Please provide the following information

Town/City in which you teach

The Zip Code for the city/town in which you teach

State in which you teach

28. Check the ONE option which best describes your race/ethnicity:

- Native American/Native Alaskan
- Native Hawaiian/other Pacific Islander
- Black/African American

- Hispanic/Latino(a)
- Non-Hispanic White
- Multiple races/ethnicities
- I do not wish to answer this question

29. What is your age?

30. What is your total household income?

- Less than \$10,000
- \$10,000 to \$19,999
- \$20,000 to \$29,999
- \$30,000 to \$39,999
- \$40,000 to \$49,999
- \$50,000 to \$59,999
- \$60,000 to \$69,999
- \$70,000 to \$79,999
- \$80,000 to \$89,999
- \$90,000 to \$99,999
- \$100,000 to \$149,999
- \$150,000 or more
- I do not wish to answer this question

31. What is your marital status?

- Never married
- Married
- Divorced
- Separated
- Widowed
- Non-marital relationship
- Same-sex relationship
- I do not wish to answer this question

32. What is your political orientation?

- Very conservative
 - Conservative
 - Middle of the road
 - Liberal
 - Very liberal
 - Apolitical
 - I do not wish to answer this question
- Other (please specify)

33. What is your religious affiliation?

- Christian/Catholic
 - Christian/other
 - Islamic
 - Jewish
 - Hindu
 - Agnostic
 - Atheist
 - None
 - I do not wish to answer this question
- Other (please specify)

34. What kind of area did you grow up in? (Mark all that apply)

- Rural/country
- Small town (population less than 2000)
- Town (population greater than 2000)
- Suburban
- Urban/large city
- I do not wish to answer this question

35. What kind of area do you presently live in?

- Rural/country
- Small town (population less than 2000)
- Town (population greater than 2000)
- Suburban

- Urban/inner city
- I do not wish to answer this question

36. What kind of area do you presently teach in?

- Rural/country
- Small town (population less than 2000)
- Town (population greater than 2000)
- Suburban
- Urban/inner city
- I do not wish to answer this question

37. What kind(s) of area(s) have you taught in in the past? (mark all that apply)

- Rural/country
- Small town (population less than 2000)
- Town (population greater than 2000)
- Suburban
- Urban/inner city
- Not Applicable-I have always taught in the area in which I currently teach
- I do not wish to answer this question

38. How many years have you taught in higher education?

39. An electronic copy of the consent form and/or a summary of the results of this study will be provided upon request. Please indicate if you wish to receive either by using the buttons below and by supplying your e-mail address.

- I wish to receive a copy of the consent form for my records
- I wish to receive a summary of the findings of this study

E-mail

Thank you for taking time to participate in this study. Your input is critical to my work. Now please consider answering an optional set of six open-ended questions that have been designed to add depth and richness to this study. Upon completion you will qualify for a \$15 Target gift card. To claim your gift card please supply your name and e-mail address in the box at the end of the survey.

If you do not wish to participate in this portion of the study, scroll to the bottom of the page and click done.

As you answer the following questions add as much detail as possible. Tell how you feel about the topics and why you feel that way, discuss your perceptions and observations, give your opinions and share your own experiences.

You are under no obligation to answer questions. If you choose not to answer a question, please indicate this in the text box and move on to the next option.

40. In your own words, please define the term environmental justice. Please be as specific as possible.



41. What do you know about environmental justice?



42. What populations are affected by environmental justice? In what ways? Give as much detail as possible.



43. In general, what do the students which you instruct know about environmental justice? Give examples if applicable.



44. Should students know about environmental justice? Why or why not?



45. Should colleges/universities include topics of environmental justice in their coursework? Please explain your answer as fully as possible.



46. Do you include topics of environmental justice in your teaching? Why or why not? Give examples if applicable.



47. What GENERAL types of materials, if any, do you use to teach environmental justice? How are they used?



48. What do you see as your role in the classroom concerning environmental justice?



49. Thank you for your thoughtful answers. If you wish to claim your \$15 Target gift card, please supply your full name and e-mail address in the box below. Your gift card will be sent via e-mail. This information will not be used as part of this study.



B-2. Quantitative Questionnaire Contributing References

The following references acted in foundational ways during questionnaire construction.

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APPENDIX C

QUANTITATIVE DATA ANALYSIS

C-1. Quantitative Survey Results as Presented in SurveyMonkey Analysis

See pocket at rear of document

C-2. Participant Age

Participant Age	Tally	# of Profs	# in Age Range	Total Years Teaching	5-Year Total	5-Year Mean	10-Year Total	10-Year Mean
25		0	25-29 1	0	27	27	541	31.8
26		0		0				
27	x	1		27				
28		0		0				
29		0		0				
30	xxx	3	30-34 16	90	514	32.1		
31	xxx	3		93				
32	xxx	3		96				
33	xxx	3		99				
34	xxxx	4		136				
35	xxxxxxx	6	35-39 21	210	779	37.1	1329	39.1
36	xx	2		72				
37	xxx	3		111				
38	xxxx	4		152				
39	xxxxxxx	6		234				
40	x	1	40-44 13	40	550	42.3		
41	xx	2		82				
42	xxx	3		126				
43	xxxxxxx	6		258				
44	x	1		44				
45	xxxxxxx	6	45-49 15	270	694	46.3	2200	50
46	xxx	3		138				
47	xxx	3		141				
48	xx	2		96				
49	x	1		49				
50	xxxxxxx	6	50-54	300	1506	51.9		

51	xxxxxxx	7	29	357				
52	xxxxx	5		260				
53	xxxxx	5		265				
54	xxxxxx	6		324				
55	xxxxxxxxx	7	55-59	385	1366	56.9	2598	59
56	xxx	3	24	168				
57	xxxxx	5		285				
58	xxx	3		174				
59	xxxxxx	6		354				
60	xxx	3	60-64	180	1232	61.6		
61	xxxxxxxxx	8	20	488				
62	xxxx	4		248				
63	xxxx	4		252				
64	x	1		64				
65	x	1	65-69	65	667	66.7	741	67.4
66	xxxx	4	10	264				
67	xxx	3		201				
68	x	1		68				
69	x	1		69				
70		0	70-74	0	74	74		
71		0	1	0				
72		0		0				
73		0		0				
74	x	1		74				
75		0	75-79	0	0	N/A	80	80
76		0	0	0				
77		0		0				
78		0		0				
79		0		0				
80	x	1	80-84	80	80	80		
81		0	1	0				
82		0		0				
83		0		0				
84		0		0				
Total		151		7107				
Range				55				
Mean				47.1				
Median				51				
Mode				61				

C-3. Years of Teaching									
# Yrs	Tally	# of Profs	Total Years Teaching	5-Year # of Profs	5-Year Total	Teaching 5-Year Mean	10-Year # of Profs	10-Year Total	Teaching 10-Year Mean
1	x	1	1	24	96	4	48	295	6.1
2	xxx	3	6						
3	xxx	3	9						
4	xxxxx	5	20						
5	xxxxx xxxxx xx	12	60						
6	xxx	3	18	24	199	8.3			
7	xxxxx	5	35						
8	xxxxx	5	40						
9	xxxx	4	36						
10	xxxxx xx	7	70						
11	xxxxx	5	55	24	315	13.1	41	596	14.5
12	xxxxx x	6	72						
13	xxx	3	39						
14	x	1	14						
15	xxxxx xxxx	9	135						
16	xx	2	32	17	281	16.5			
17	xxxx	4	68						
18	xxx	3	54						
19	xxx	3	27						
20	xxxxx	5	100						
21	xxxx	4	84	24	561	23.4	39	996	25.5
22	xxx	3	66						
23	xxxxx x	6	138						
24	xx	2	48						
25	xxxxx xxxx	9	225						
26	x	1	26	15	435	29			
27	xxx	3	81						
28	x	1	28						
29		0	0						

30	xxxxx xxxxx	10	300						
31	xxx	3	93	10	326	32.6	21	754	35.9
32	xxx	3	96						
33	x	1	33						
34	x	1	34						
35	xx	2	70						
36		0	0	11	428	38.9			
37	xx	2	74						
38	xx	2	76						
39	xx	2	78						
40	xxxxx	5	200						
Total		150	2641		2641				
Mean			17.6						
Median			16						
Mode			5						

C-4. Table of Correlations

	I feel that I know what environmental justice is			I feel that is important for Americans to live & act in environmentally just ways			Most Americans feel it is important to know about environmental justice		
	n	r	p	n	r	P	n	r	p
political orientation	141	.234	.005	141	.193	.022	-	-	-
race	147	.162	.049	-	-	-	148	-.165	.046
household income	-	-	-	-	-	-	-	-	-
marital status	-	-	-	-	-	-	-	-	-
religious orientation	-	-	-	-	-	-	-	-	-
area you presently live in	-	-	-	-	-	-	-	-	-
area you presently teaching in	-	-	-	-	-	-	-	-	-
state	-	-	-	-	-	-	-	-	-
Zip code	-	-	-	-	-	-	-	-	-

	Environmental justice is related to one's skin color			Environmental justice is related to one's income level			Environmental justice is both an urban and a rural problem		
	n	r	p	n	r	P	n	r	p
political orientation	141	.256	.002	141	.302	.000	141	.175	.038
race	-	-	-	-	-	-	-	-	-
household income	148	.235	.005	148	.215	.009	-	-	-
marital status	-	-	-	-	-	-	-	-	-
religious orientation	-	-	-	-	-	-	-	-	-
area you presently live in	148	.172	.037	148	.238	.004	-	-	-
area you presently teaching in	-	-	-	-	-	-	-	-	-
state	-	-	-	-	-	-	-	-	-
Zip code	-	-	-	-	-	-	-	-	-

n = number of participants responding to statement
r = Pearson's Correlation Coefficient
p = Significance at p<0.05 level
- = No relationship

	In U.S. there are inequalities in exposure to toxic substances based on socioeconomic status			The best predictor of live of exposure to environmental hazards is race			The lower one's income the more likely one is to live in an area with high levels of pollution		
	n	r	p	n	r	p	n	r	p
political orientation	141	.185	.028	141	.312	.000	141	.190	.024
race	-	-	-	-	-	-	-	-	-
household income	147	.181	.028	-	-	-	-	-	-
-marital status	-	-	-	148	.167	.043	-	-	-
religious orientation	-	-	-	-	-	-	-	-	-
area you presently live in	147	.174	.036	-	-	-	148	.164	.046
area you presently teaching in	147	.216	.009	-	-	-	-	-	-
state	-	-	-	-	-	-	-	-	-
Zip code	-	-	-	-	-	-	-	-	-

	Comparing persons of color to those considered "White" persons of color are more likely to live in polluted neighborhoods			Professors of Science are usually well informed and knowledgeable about environmental justice			Issues of environmental justice can be addressed in all higher education courses		
	n	r	P	n	r	p	n	R	P
political orientation	141	.400	.000	142	-.244	.003	-	-	-
race	-	-	-	-	-	-	-	-	-
household income	148	.186	.024	149	-.220	.007	-	-	-
-marital status	-	-	-	-	-	-	-	-	-
religious orientation	-	-	-	-	-	-	-	-	-
area you presently live in	148	.181	.027	-	-	-	-	-	-
area you presently teaching in	-	-	-	-	-	-	-	-	-
state	-	-	-	-	-	-	-	-	-
Zip code	-	-	-	-	-	-	-	-	-

n = number of participants responding to statement

r = Pearson's Correlation Coefficient

p = Significance at p<0.05 level

- = No relationship

	Introducing students to environmental justice and solutions should be a goal of higher education			Topics related to environmental justice can be included in most college courses			Environmental justice should be part of the K-12 curriculum		
	n	r	p	n	r	p	n	r	p
political orientation	142	.254	.002	-	-	-	142	.185	.028
race	-	-	-	-	-	-	-	-	-
household income	-	-	-	-	-	-	-	-	-
marital status	-	-	-	-	-	-	-	-	-
religious orientation	-	-	-	148	.216	.008	-	-	-
area you presently live in	-	-	-	-	-	-	149	.170	.039
area you presently teaching in	-	-	-	-	-	-	-	-	-
state	-	-	-	-	-	-	-	-	-
Zip code	-	-	-	140	.193	.022	-	-	-

	Although White middle class Americans are not directly affected by issues of environmental justice, they are indirectly affected by them			Solving problems of environmental justice is a pressing issue which our nation needs to address			Making citizens aware of the problems, causes, and solutions to issue which our nation needs to address		
	n	r	p	n	r	p	n	r	p
political orientation	-	-	-	142	.221	.008	142	.189	.024
race	-	-	-	-	-	-	-	-	-
household income	149	.172	.036	-	-	-	-	-	-
marital status	-	-	-	-	-	-	-	-	-
religious orientation	-	-	-	-	-	-	-	-	-
area you presently live in	-	-	-	-	-	-	-	-	-
area you presently teaching in	-	-	-	-	-	-	-	-	-
state	-	-	-	-	-	-	-	-	-
Zip code	-	-	-	-	-	-	-	-	-

n = number of participants responding to statement

r = Pearson's Correlation Coefficient

p = Significance at p<0.05 level

- = No relationship

	In the U.S. there is unequal protection under the law when it comes to exposure to environmental pollution and hazards			Most holders of BA or BS degree in environmental sciences/studies can give a working definition of environmental justice		
	n	r	P	n	r	P
political orientation	-	-	-	-	-	-
race	-	-	-	-	-	-
household income	-	-	-	-	-	-
marital status	-	-	-	-	-	-
religious orientation	-	-	-	-	-	-
area you presently live in	-	-	-	-	-	-
area you presently	-	-	-	149	-.178	.030

teaching in						
state						
Zip code	-	-	-	-	-	-
	All branches of the government are by law responsible for environmental justice			Issues of environmental justice are a kind of environmental racism		
	n	r	p	n	r	P
political orientation	-	-	-	141	.369	.000
race	-	-	-	-	-	-
household income	-	-	-	147	.181	.028
marital status	-	-	-	-	-	-
religious orientation	-	-	-	-	-	-
area you presently live in	-	-	-	-	-	-
area you presently teaching in	-	-	-	-	-	-
state	145	.183	.028			
Zip code	-	-	-	-	-	-

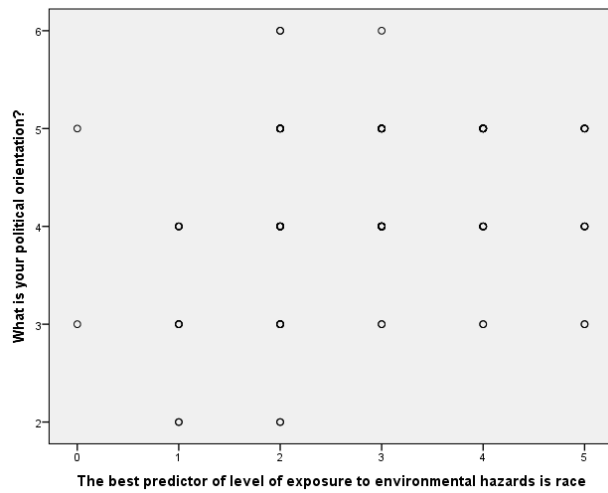
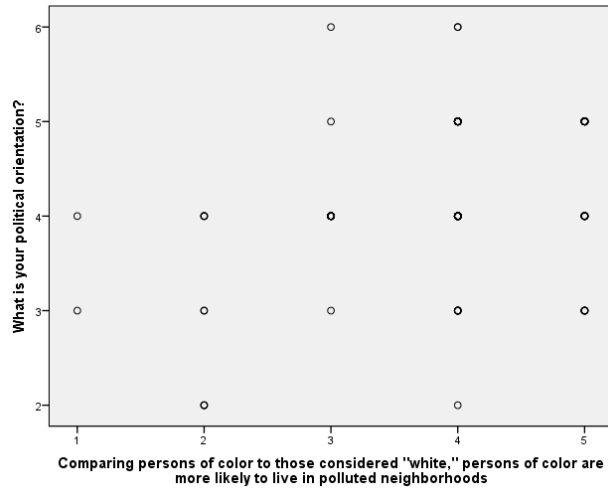
n = number of participants responding to statement

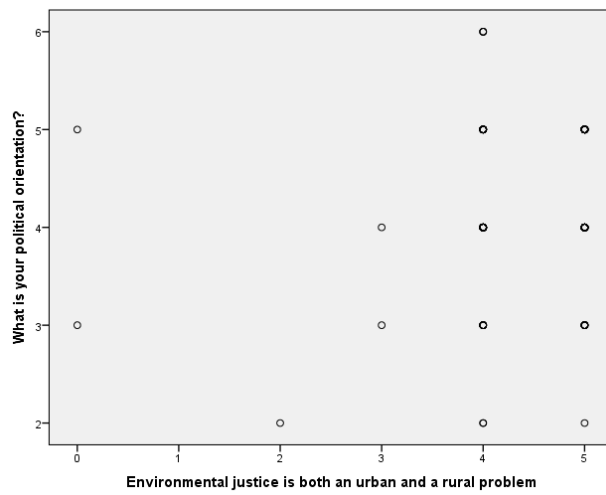
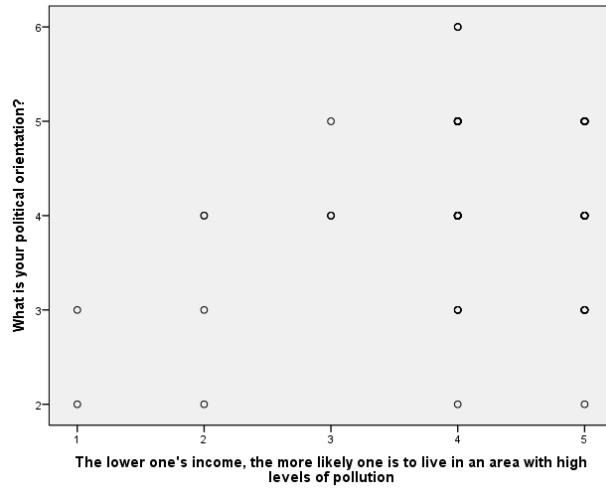
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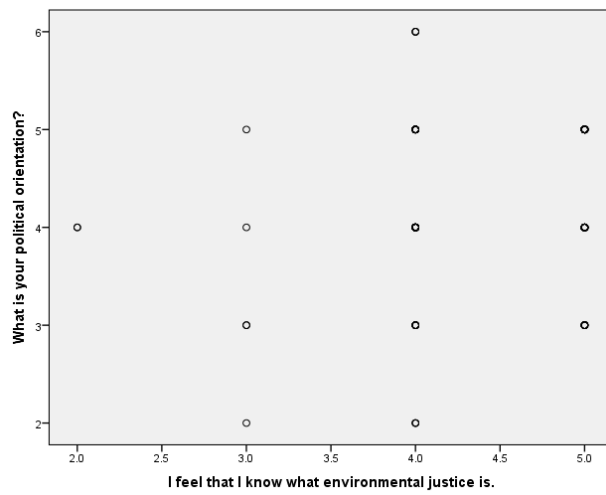
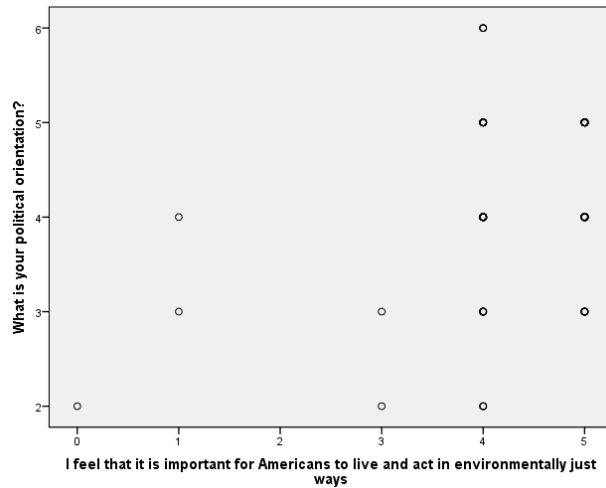
p = Significance at p<0.05 level

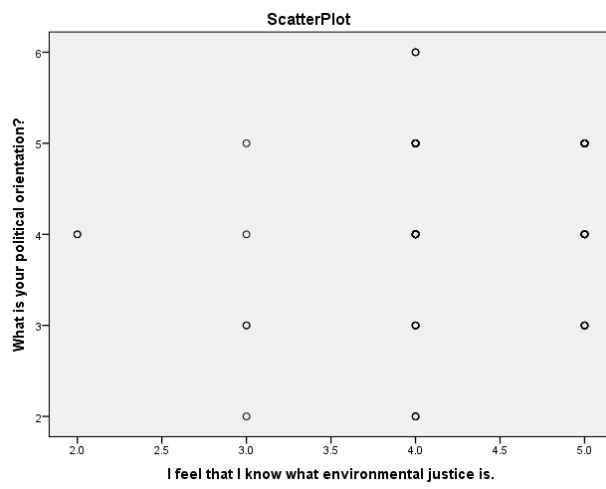
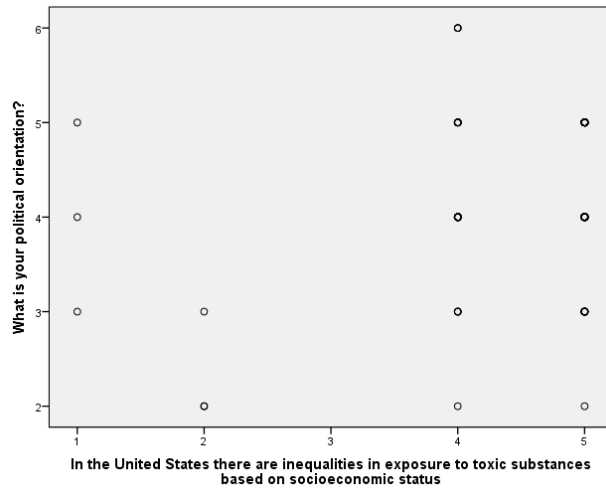
- = No relationship

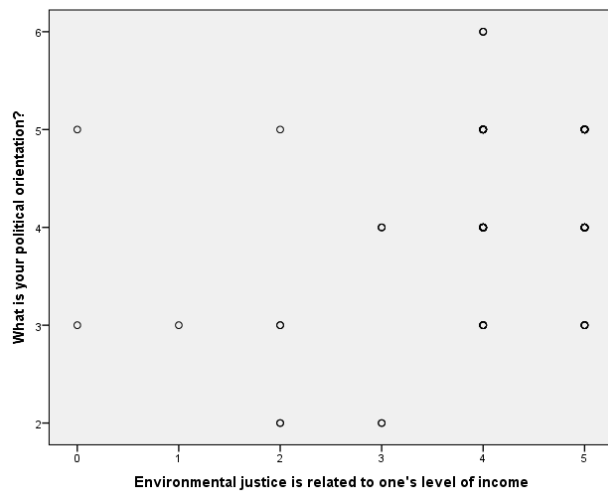
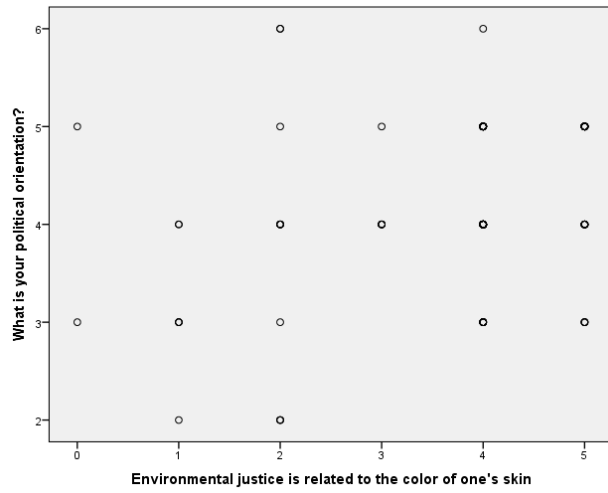
C-5. Correlation Scatter Plots

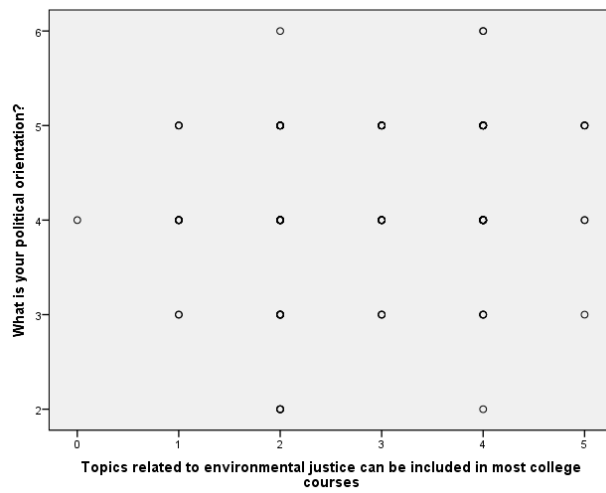
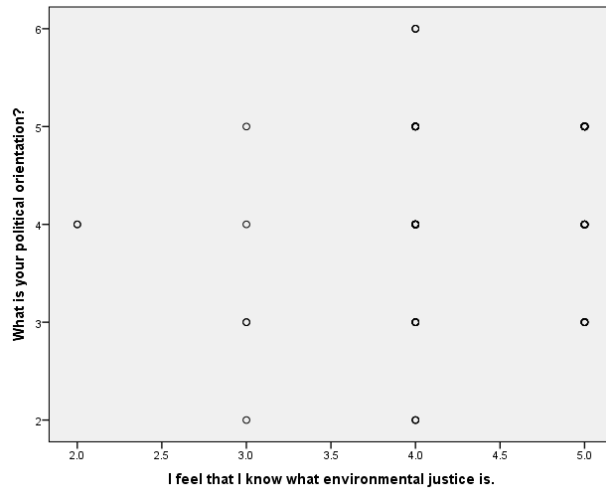


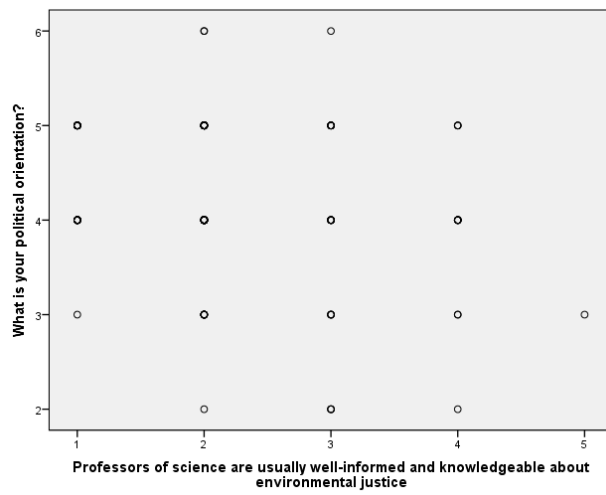
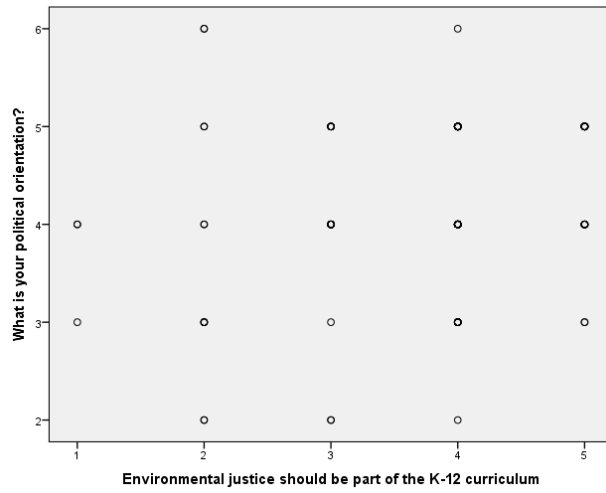


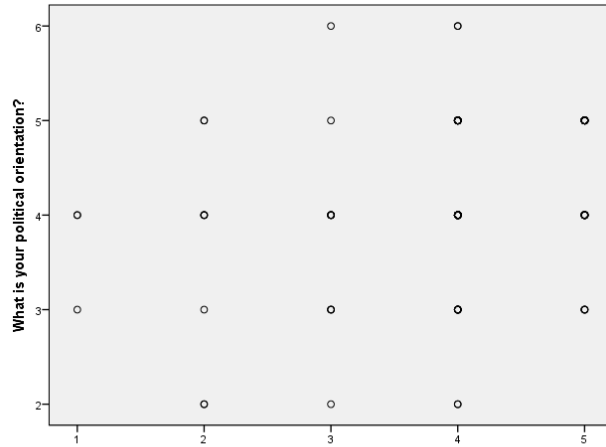




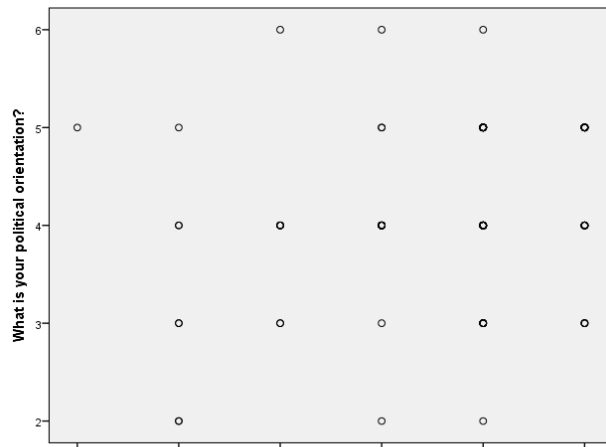




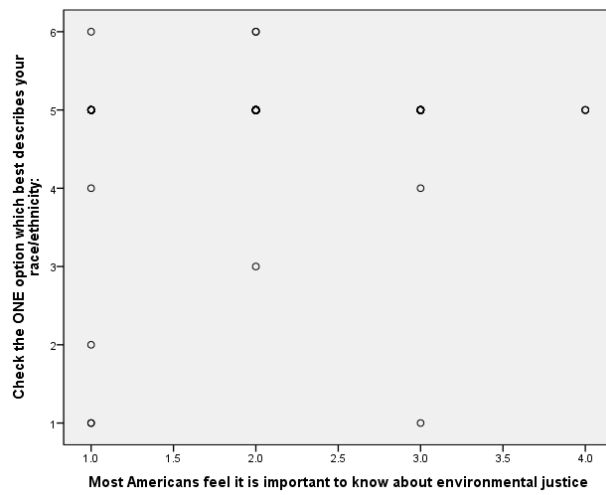
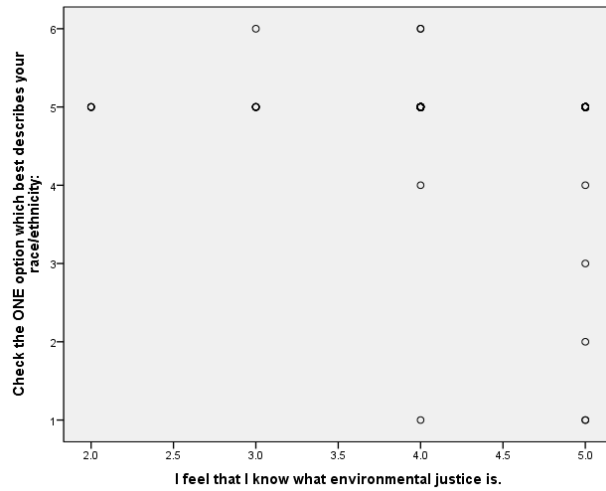


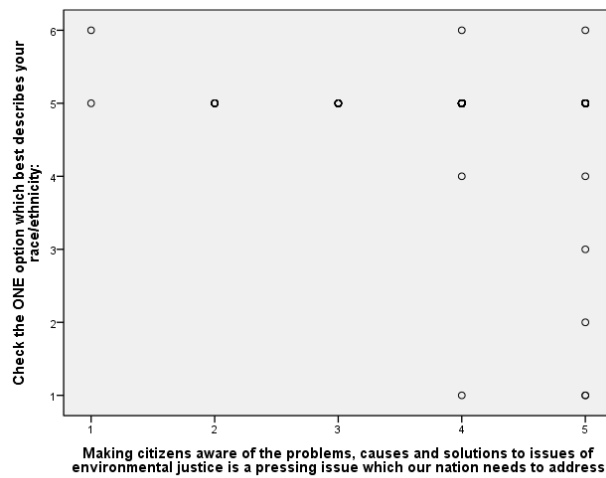
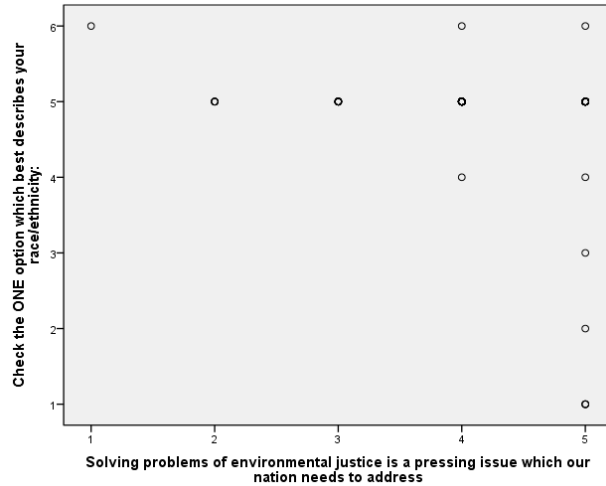


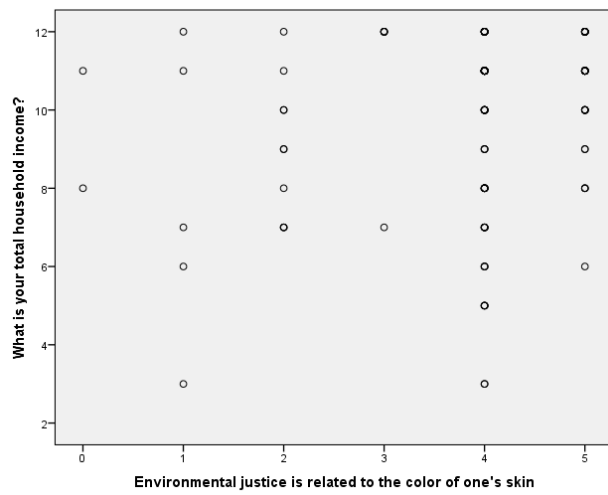
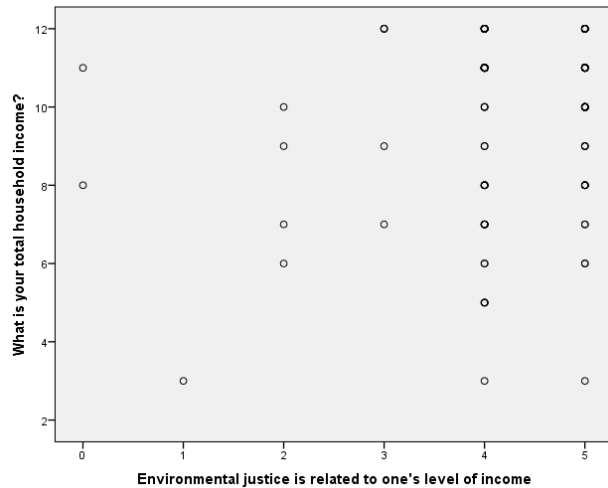
Making citizens aware of the problems, causes and solutions to issues of environmental justice is a pressing issue which our nation needs to address

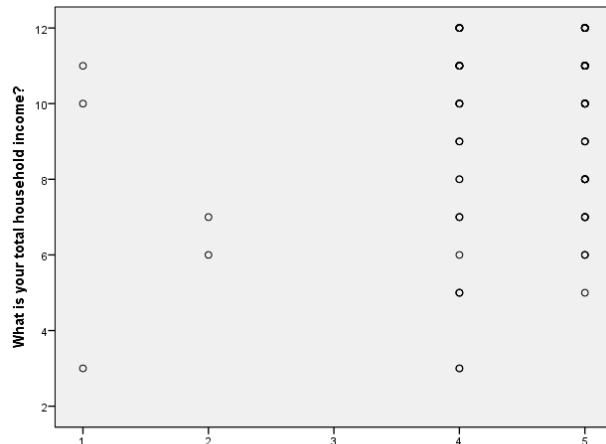


Issues of environmental justice are a kind of environmental racism

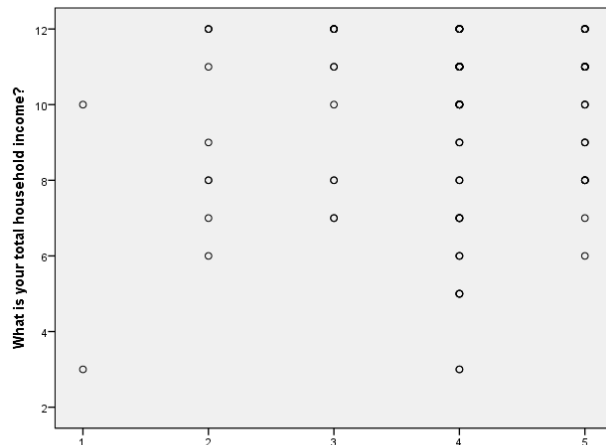




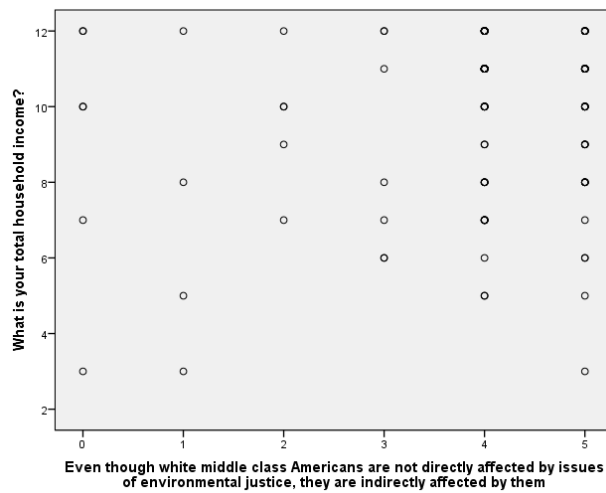
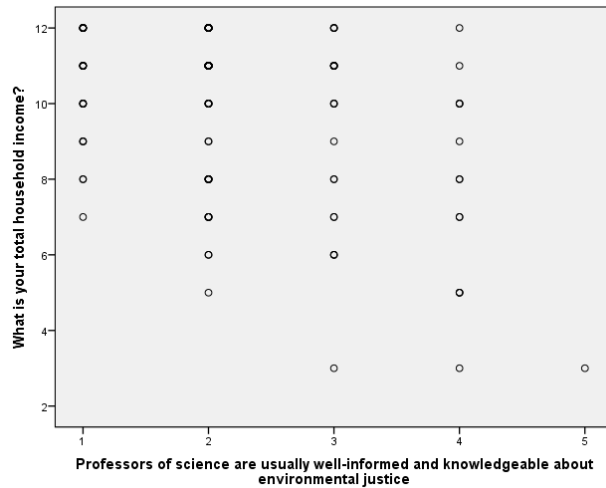


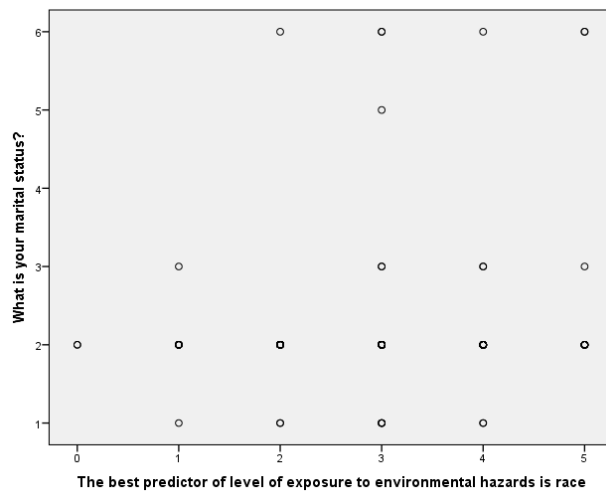
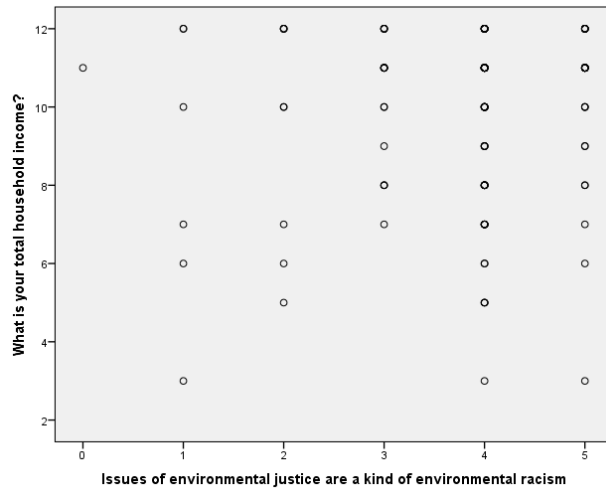


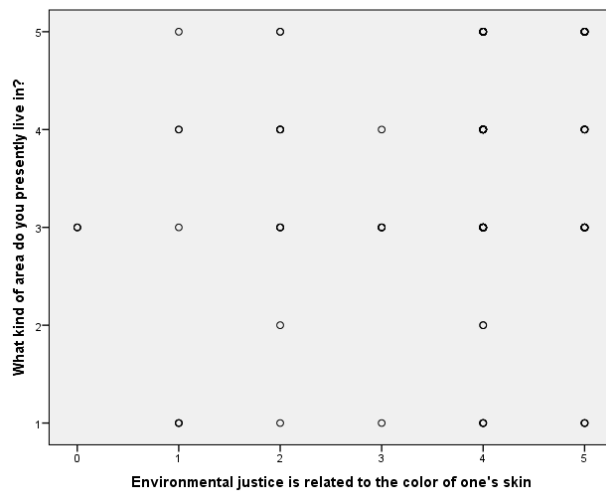
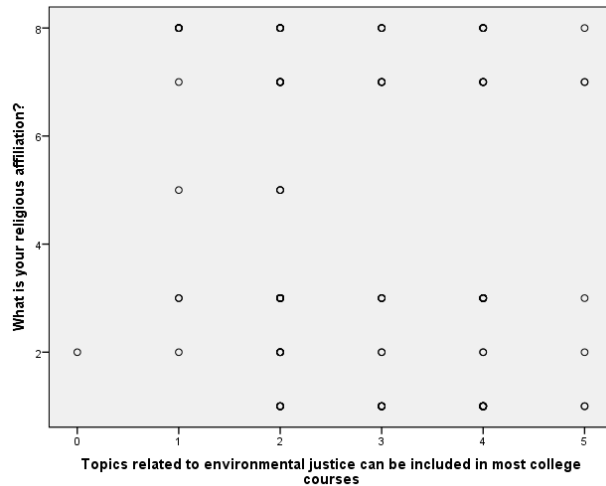
In the United States there are inequalities in exposure to toxic substances based on socioeconomic status

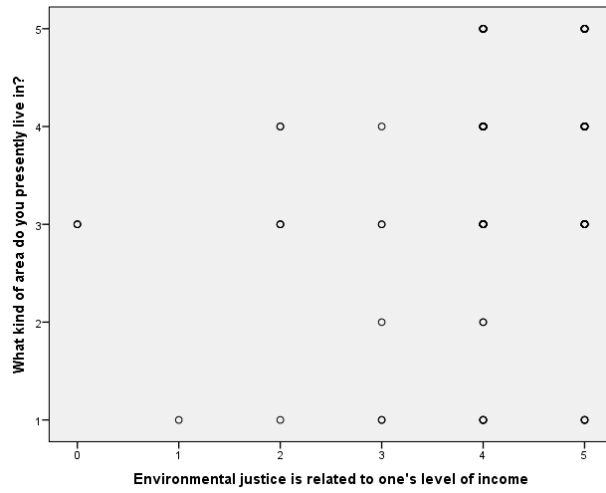


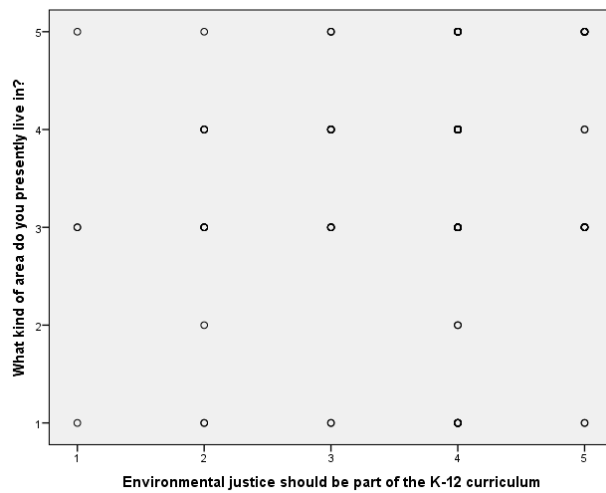
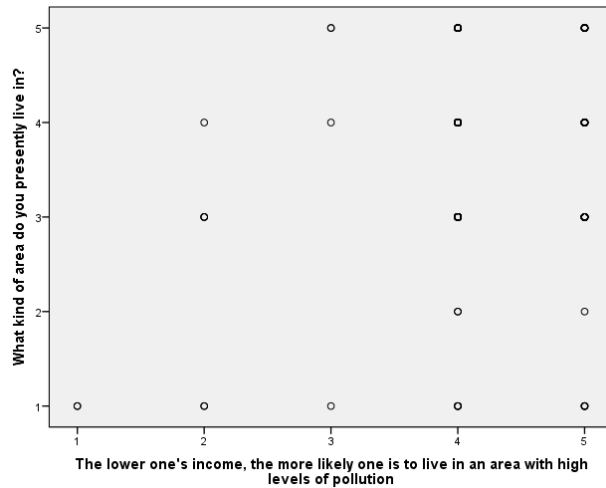
Comparing persons of color to those considered "white," persons of color are more likely to live in polluted neighborhoods

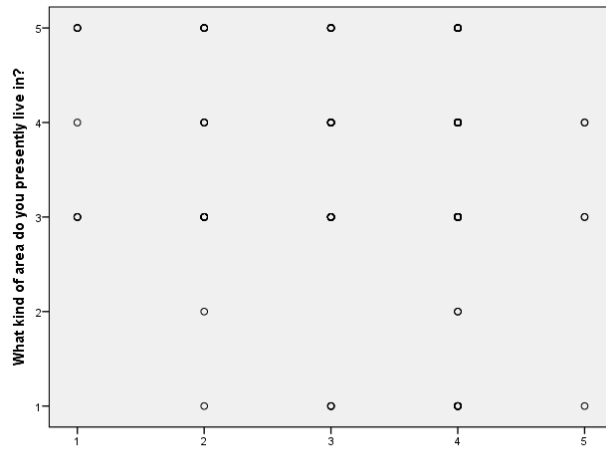




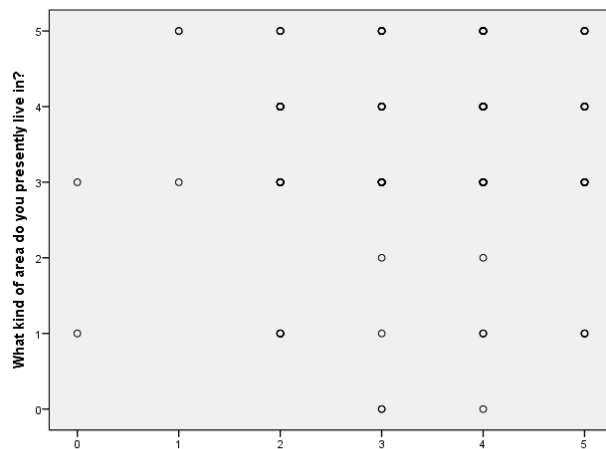




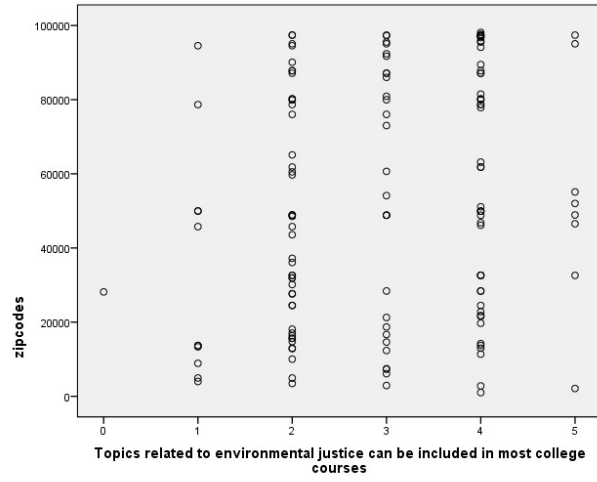




Most persons who hold a baccalaureate degree in environmental science/studies can give a working definition of environmental justice.



All branches of the government are, by law, responsible for environmental justice



C-6. Tables of Means

See following pages

C-6a. Mean Scores for Political Orientation

C-6b. Mean Scores for Race

C-6c. Mean Scores for Household Income

C-6d. Mean Scores for Marital Status

C-6e. Mean Scores for Religious Orientation

C-6f. Mean Scores for Area Currently Living In

C-6g. Mean Scores for Areas Currently Teach In

C-6h. Mean Scores by State

C-6i. Mean Scores by Zip Code

C-6a. Mean Scores for Political Orientation									
	I do not wish to answer			Conservative			Middle of the Road		
	M	SD	n	M	SD	n	M	SD	n
I feel that I know what environmental justice is	-	-	11	3.75	.50	4	4.35	.70	17
Environmental justice is related to one's skin color	-	-	11	1.75	.50	4	3.35	1.66	17
Environmental justice is related to one's level of income	-	-	11	2.50	.58	4	3.71	1.53	17
Environmental justice is both an urban and a rural problem	-	-	11	3.75	1.26	4	4.18	1.24	17
The best predictor of level of exposure to environment hazards is race	-	-	11	1.50	.58	4	2.35	1.46	17
In the U.S. there are inequalities in exposure to toxic substances based on socioeconomic status	-	-	11	3.25	1.50	4	4.35	1.17	17
The lower one's income the more likely one is to live in an area with high levels of pollution	-	-	11	3.0	1.83	4	4.29	1.16	17
Comparing persons of color to those considered "White" persons of color are more likely to live in polluted neighborhoods	-	-	11	2.5	1.0	4	3.88	1.22	17
Professors of Science are usually well informed and knowledgeable about environmental justice	-	-	11	3.0	1.0	5	3.35	1.22	17
I feel that it is important for Americans to live and act in environmentally just ways	-	-	11	3.0	1.73	5	4.24	1.03	17
Issues of environmental justice are a kind of environmental racism	-	-	11	2.25	1.50	4	2.59	1.35	17
Introducing students to environmental justice issues and solutions should be one of the goals in higher education	-	-	11	1.80	1.48	5	3.12	1.32	17
Environmental justice should be part of the K-12 curriculum	-	-	11	2.80	.84	5	3.41	1.18	17

Solving problems of environmental justice is a pressing issue which our nation needs to address	-	-	11	3.0	1.71	5	3.71	1.05	17
Making citizens aware of the problems, causes, and solutions to issues of environmental justice is a pressing issue which our nation needs to address	-	-	11	3.0	1.0	5	3.76	1.09	17

	Liberal			Very Liberal			Apolitical		
	M	SD	n	M	SD	n	M	SD	n
I feel that I know what environmental justice is	4.25	.66	59	4.62	.53	47	4.0	.00	3
Environmental justice is related to one's skin color	3.81	.94	59	4.28	.90	47	2.67	1.16	3
Environmental justice is related to one's level of income	4.37	.58	59	4.40	.90	47	4.0	.00	3
Environmental justice is both an urban and a rural problem	4.51	.54	59	4.55	.83	47	4.0	.00	3
The best predictor of level of exposure to environment hazards is race	2.92	1.02	59	3.30	1.01	47	2.33	.58	3
In the U.S. there are inequalities in exposure to toxic substances based on socioeconomic status	4.58	.67	59	4.72	.68	47	4.0	.00	3
The lower one's income the more likely one is to live in an area with high levels of pollution	4.29	.70	59	4.49	.55	47	3.0	1.0	3
Comparing persons of color to those considered "White" persons of color are more likely to live in polluted neighborhoods	3.81	.88	59	4.38	.53	47	3.67	.58	3
Professors of Science are usually well informed and knowledgeable about environmental justice	3.24	.95	59	1.98	.85	47	2.33	1.58	3
I feel that it is important for Americans to live and act in environmentally just ways	4.42	.68	59	4.70	.47	41	4.0	.00	3

Issues of environmental justice are a kind of environmental racism	3.66	.98	59	4.17	.96	47	3.0	1.0	3
Introducing students to environmental justice issues and solutions should be one of the goals in higher education	3.61	1.05	59	3.94	.87	47	3.0	1.0	3
Environmental justice should be part of the K-12 curriculum	3.81	.84	59	4.09	.78	47	2.67	1.16	3
Solving problems of environmental justice is a pressing issue which our nation needs to address	4.14	.75	59	4.45	.72	47	3.67	.58	3
Making citizens aware of the problems, causes, and solutions to issues of environmental justice is a pressing issue which our nation needs to address	3.93	.96	59	4.38	.74	47	3.67	.58	3

C-6b. Mean Scores for Race									
	I do not wish to answer			Native American/ Native Alaskan			Native Hawaiian/ other Pacific Islander		
	M	SD	n	M	SD	n	M	SD	n
I feel that it is important that I know what environmental justice is	-	-	10	5.0	1.0	3	5.0	-	1
Most Americans feel it is important to know about environmental justice	-	-	10	1.67	1.16	3	1.0	-	1

	Black/African American			Hispanic/Latino(a)			Non-Hispanic White		
	M	SD	n	M	SD	n	M	SD	n
I feel that it is important that I know what environmental justice is	5.0	-	1	4.50	1.71	2	3.33	2.08	3
Most Americans feel it is important to know about environmental justice	2.0	-	1	2.0	1.4	2	2.04	.70	28

	Multiple races/ ethnicities		
	M	SD	n
I feel that it is important that I know what environmental justice is	3.35	2.08	3
Most Americans feel it is important to know about environmental justice	1.67	.58	3

C-6c. Mean Scores for Household Income									
	Less than \$10,000			\$10,000 to \$19,999			\$20,000 to \$29,999		
	M	SD	n	M	SD	n	M	SD	n
Environmental justice is related to one's skin color	-	-	-	-	-	-	4.0	-	1
Environmental justice is related to one's level of income	-	-	-	-	-	-	4.0	-	1
In U.S. there are inequalities in exposure to toxic substances based on socioeconomic status	-	-	-	-	-	-	4.0	-	1
Issues of environmental justice are a kind of environmental racism	-	-	-	-	-	-	4.0	-	1
Comparing persons of color to those considered "White" persons of color are more likely to live in polluted neighborhoods	-	-	-	-	-	-	4.0	-	1
Professors of Science are usually well informed and knowledgeable about environmental justice	-	-	-	-	-	-	3.0	-	1
Even though White middle class Americans are not directly affected by issues of environmental justice they are indirectly affected by them	-	-	-	-	-	-	5.0	-	1

	\$30,000 to \$39,999			\$40,000 to \$49,999			\$50,000 to \$59,999		
	M	SD	n						
Environmental justice is related to one's skin color	-	-	-	4.23	.5	4	4.20	1.30	
Environmental justice is related to one's level of income	-	-	-	4.0	0.0	4	4.0	1.23	
In U.S. there are inequalities in exposure to toxic substances based on socioeconomic status	-	-	-	4.25	.5	4	4.20	1.30	
Issues of environmental justice area kind of environmental racism	-	-	-	3.50	1.73	4	3.20	1.64	
Comparing persons of color to those considered "White" persons of color are more likely to live in polluted neighborhoods	-	-	-	4.0	0.0	4	3.80	1.10	
Professors of Science are usually well informed and knowledgeable about environmental justice	-	-	-	3.50	1.0	4	2.60	.55	
Even though White middle class Americans are not directly affected by issues of environmental justice they are indirectly affected by them	-	-	-	3.50	1.73	4	4.0	1.64	

	\$60,000 to \$6,9999			\$70,000 to \$79,999			\$80,000 to \$89,999		
	M	SD	n	M	SD	n	M	SD	n
Environmental justice is related to one's skin color	3.0	1.16	10	3.77	1.36	13	3.71	1.25	7
Environmental justice is related to one's level of income	3.90	.88	10	4.15	1.35	13	4.0	1.16	7
In U.S. there are inequalities in exposure to toxic substances based o socioeconomic status	4.40	.77	10	4.85	.38	13	4.57	.54	7
Issues of environmental justice area kind of environmental racism	3.50	1.18	10	3.92	.64	13	4.14	.69	7
.05Comparing persons of color to those considered "White" persons of color are more likely to live in polluted neighborhoods	3.70	.82	10	4.0	1.16	13	4.14	1.07	7
Professors of Science are usually well informed and knowledgeable about environmental justice	2.50	.97	10	2.31	.95	13	2.0	1.16	7
Even though White middle class Americans are not directly affected by issues of environmental justice they are indirectly affected by them	3.40	1.43	10	4.15	1.44	13	4.29	1.11	7

	\$90,000 to \$99,999			\$100,000 to \$14,9999			\$150,000 or more		
	M	SD	n	M	SD	n	M	SD	n
Environmental justice is related to one's skin color	4.12	.93	17	4.10	1.05	39	4.0	1.0	29
Environmental justice is related to one's level of income	4.65	.79	17	4.33	.87	39	4.28	.65	29
In U.S. there are inequalities in exposure to toxic substances based o socioeconomic status	4.47	1.01	17	4.63	.75	38	4.69	.479	2
Issues of environmental justice area kind of environmental racism	3.65	1.12	17	4.05	.99	38	3.59	1.21	29
.05Comparing persons of color to those considered "White" persons of color are more likely to live in polluted neighborhoods	3.94	.90	17	4.18	.64	39	3.86	.95	29
Professors of Science are usually well informed and knowledgeable about environmental justice	2.24	1.09	17	2.05	.68	40	1.90	.77	29
Even though White middle class Americans are not directly affected by issues of environmental justice they are indirectly affected by them	3.71	1.69	17	4.32	.53	40	3.76	1.38	29

C-6d. Mean Scores for Marital Status									
	I do not wish to answer			Never Married			Divorced		
	M	SD	n	M	SD	n	M	SD	n
The best predictor of level of exposure to environmental hazards is race	-	-	11	2.78	.97	9	2.84	1.15	115

	Separated			Widowed			Non-marital Relationship		
	M	SD	n	M	SD	n	M	SD	n
The best predictor of level of exposure to environmental hazards is race	3.33	1.37	6	-	-	-	3.67	1.21	6

	Same sex Relationship		
	M	SD	n
The best predictor of level of exposure to environmental hazards is race	-	-	-

C-6e. Mean Scores for Religious Orientation									
	I do not wish to answer			Christian/Catholic			Islamic		
	M	SD	n	M	SD	n	M	SD	n
Issues of environmental justice can be addressed by all higher education	-	-	21	3.73	.98	33	3.69	.95	13
Topics related to environmental justice can be included in most college courses	-	-	21	3.45	.87	33	2.46	1.33	13

	Jewish			Hindu			Agnostic		
	M	SD	n	M	SD	n	M	SD	n
Issues of environmental justice can be addressed by all higher education	3.10	1.32	30	-	-	-	3.25	1.5	4
Topics related to environmental justice can be included in most college courses	2.77	1.07	30	-	-	-	1.75	.50	4

	Atheist			None		
	M	SD	n	M	SD	n
Issues of environmental justice can be addressed by all higher education	3.69	.95	13	3.72	1.10	25
Topics related to environmental justice can be included in most college courses	2.46	1.33	13	2.48	1.26	25

C-6f. Mean Scores for Area Currently Living

	I do not wish to answer			Rural/Country			Small town (population less than 2000)			Town (population greater than 2000)			Suburban			Urban/Large City	
	M	SD	n	M	SD	n	M	SD	n	M	SD	n	M	SD	N	M	SD
In the U.S. there are inequalities in exposure to toxic substances based on socioeconomic status	-	-	4	4.71	.49	7	3.50	1.73	4	4.49	.90	65	4.71	.46	24	4.49	.83
Most people who hold a Bachelor of Arts/Bachelor of Science degree in environmental sciences/studies can give a working definition of environmental justice	-	-	4	1.71	.95	7	2.0	.82	4	1.98	.92	66	1.72	.54	25	2.00	1.02

C-6g. Mean Scores for Areas Currently Teaching

	I do not wish to answer			Rural/Country			Small town (population less than 2,000)		
	M	SD	n	M	SD	n	M	SD	n
In the U.S. there are inequalities in exposure to toxic substances based on socioeconomic status	-	-	4	4.71	.49	7	3.50	1.73	4
Most people who hold a Bachelor of Arts/Bachelor of Science degree in environmental sciences/studies can give a working definition of environmental justice	-	-	4	1.71	.95	7	2.0	.82	4

	Town (population greater than 2,000)			Suburban			Urban/Large City		
	M	SD	n	M	SD	N	M	SD	n
In the U.S. there are inequalities in exposure to toxic substances based on socioeconomic status	4.49	.90	65	4.71	.46	24	4.49	.83	43
Most people who hold a Bachelor of Arts/Bachelor of Science degree in environmental sciences/studies can give a working definition of environmental justice	1.98	.92	66	1.72	.54	25	2.00	1.02	43

C-6h. Mean Scores by State												
	Alabama			Alaska			Arizona			Arkansas		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
All branches of the government are by law responsible for environment justice	4	-	1	3	-	1	4	-	-	5	-	1

	California			Colorado			Connecticut			Delaware		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
All branches of the government are by law responsible for environment justice	2	-	-	0.0	-	1	2	-	1	5	-	1

	Florida			Georgia			Hawaii			Idaho		
	M	SD	n	M	SD	n	M	SD	n	M	SD	N
All branches of the government are by law responsible for environment justice	3	-	1	4	-	1	2	-	1	3	-	1

	Illinois			Indiana			Iowa			Kansas		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
All branches of the government are by law responsible for environment justice	3	-	1	5	-	1	3	-	1	5	-	1

	Kentucky			Louisiana			Maine			Maryland		
	M	SD	n	M	SD	N	M	SD	n	M	SD	N
All branches of the government are by law responsible for environment justice	-	-	-	2	-	1	4	-	1	3	-	1

	Massachusetts			Michigan			Minnesota			Mississippi		
	M	SD	n	M	SD	n	M	SD	n	M	SD	N
All branches of the government are by law responsible for environment justice	4	1.4	2	4	-	1	4	-	1	5	-	1

	Missouri			Montana			Nebraska			Nevada		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
All branches of the government are by law responsible for environment justice	2.5	.71	2	5	-	1	4	-	1	5	-	1

	New Hampshire			New Jersey			New Mexico			New York		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
All branches of the government are by law responsible for environment justice	4	-	1	4	-	1	5	-	1	4	-	1

	North Carolina			North Dakota			Ohio			Oklahoma		
	M	SD	n	M	SD	n	M	SD	n	M	SD	N
All branches of the government are by law responsible for environment justice	4	-	1	5	-	1	4	-	1	3	-	1

	Oregon			Pennsylvania			Rhode Island			South Carolina		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
All branches of the government are by law responsible for environment justice	3	1.4	2	3	-	1	4	-	1	3	-	1

	South Dakota			Tennessee			Texas			Utah		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
All branches of the government are by law responsible for environment justice	4	-	1	4	-	1	3	1.4	2	4	-	1

	Vermont			Virginia			Washington			West Virginia		
	M	SD	n	M	SD	n	M	SD	n	M	SD	N
All branches of the government are by law responsible for environment justice	2	-	1	2	-	1	3	-	1	5	-	1

	Wisconsin			Wyoming			Washington DC		
	M	SD	n	M	SD	n	M	SD	n
All branches of the government are by law responsible for environment justice	2.75	.96	4	2	-	1-	-	-	-

C-6i. Mean Scores by Zip Code												
	Amherst, MA 01003			Boston, MA 02115			Bristol, RI 02809			Riverside, RI 02915		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
Topics related to environmental justice can be included in most college courses	4	-	1	5	-	1	4	-	-	3	-	1
	Rindge, NH 03461			Biddlefore, ME 04005			Brooks, Me 04921			Farmington, ME 04938		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
Topics related to environmental justice can be included in most college courses	2	-	-	1	-	1	2	-	1	1	-	1
	Hartford, CT 06106			Jersey City, NJ 07302			Mahwah, NJ 07430			New Brunswick, NJ 08901		
	M	SD	n	M	SD	n	M	SD	n	M	SD	N
Topics related to environmental justice can be included in most college courses	3	-	1	3	-	1	3	-	1	1	-	1
	New York City, NY 10027			Forest Hills, NY 11375			Schenectady, NY 12345			Greenfield Center, NY 12833		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
Topics related to environmental justice can be included in most college courses	2	-	1	4	-	1	3	-	1	2	-	1
	Saratoga Springs, NY 12866			Paul Smiths, NY 12970			Saranac Lake, NY 12983			Hamilton, NY 13346		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
Topics related to environmental justice can be included in most college courses	-	-	-	2	-	1	4	-	1	1	-	1
	Potsdam, NY 13676			Buffalo, NY 14208			Rochester, NY 14623			Olean, NY 14760		
	M	SD	n	M	SD	n	M	SD	n	M	SD	N
Topics related to environmental justice can be included in most college courses	1	.00	2	4	-	1	4	-	1	3	-	1

	Latrobe, PA 15650			Meadville, PA 16335			Huntington, PA 16652			Mechanicsburg, PA 17055		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
Topics related to environmental justice can be included in most college courses	2	-	1	2	.00	2	2	-	1	3	-	1
	Allentown, PA 18104			Wilkes Barre, PA 18711			Newark, DE 19711			Baltimore, MD 21250		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
Topics related to environmental justice can be included in most college courses	2	-	1	2	-	1	3	-	1	4	-	1
	Frostburg, MD 21532			Salisbury, MD 21801			Bridgewater, VA 22812			Lynchburg, VA 24501		
	M	SD	n	M	SD	n	M	SD	n	M	SD	N
Topics related to environmental justice can be included in most college courses	3	-	1	4	-	1	4	-	1	4	-	1
	Lynchburg, VA 24503			Chapel Hill, NC 27599			Raleigh, NC 27695			Salisbury, NC 28144		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
Topics related to environmental justice can be included in most college courses	3	1.4	2	2	-	1	2	-	1	2	-	1
	Pembroke, NC 28372			Wilmington, NC 28403			Mt Berry, GA 30149			Columbus, GA 31906		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
Topics related to environmental justice can be included in most college courses	.00	-	1	4	-	1	3.5	.70	2	2	-	1
	Columbus, GA 31907			Gainesville, GA 32609			Gainesville, GA 32610			Gainesville, GA 32611		
	M	SD	n	M	SD	n	M	SD	n	M	SD	N
Topics related to environmental justice can be included in most college courses	2	-	1	2	-	1	5	-	1	2	-	1
	Troy, AL 36081			Nashville, TN 37204			Sylvania, OH 43560			Marietta, OH 45750		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
Topics related to environmental justice can be included in most college courses	3.5	1.0	4	2	-	1	2	-	1	2	-	1

	Greencastle, IN 46135			Goshen, IN 46526			Ft. Wayne, IN 46808			Flint, MI 48502		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
Topics related to environmental justice can be included in most college courses	1.5	.71	2	4	-	1	5	-	1	4	-	1
	Eagle, MI 48822			East Lansing, MI 48824			Okemos, MI 48864			Lansing, MI 48906		
	M	SD	n	M	SD	n	M	SD	n	M	SD	N
Topics related to environmental justice can be included in most college courses	2	-	1	4	-	1	2.7 5	.5	4	2	-	1
	Lansing, MI 48912			Hancock, MI 49930			Houghton, MI 49931			Ames, IA 50011		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
Topics related to environmental justice can be included in most college courses	5	-	1	2	-	1	1	-	1	4	.00	3
	Sioux City, IA 51104			Dubuque, IA 52001			De Pere, WI 54115			St. Paul, MN 55104		
	M	SD	n	M	SD	n	M	SD	n	M	SD	N
Topics related to environmental justice can be included in most college courses	1	-	1	4	-	1	5	-	1	3	-	1
	Bozeman, MT 59717			Lisle, IL 60532			Edgewater, IL 60660			Urbana, IL 61801		
	M	SD	n	M	SD	n	M	SD	n	M	SD	N
Topics related to environmental justice can be included in most college courses	5	-	1	2	-	1	2	-	1	3	-	1
	Champaign IL 61820			Champaign IL 61821			St. Louis, MO 63146			Kansas City, MO 64113		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
Topics related to environmental justice can be included in most college courses	3	-	1	4	-	1	2	-	1	4	-	1
	Jefferson city, MO 65101			Norman, OK 73019			Arlington, TX 76019			College Station, TX 77843		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
Topics related to environmental justice can be included in most college courses	4	-	1	-	-	-	2	-	1	3	-	1

	San Marcos, TX 78666			Wimberley, TX 78676			El Paso, TX 79902			Littleton, CO 80129		
	M	SD	n	M	SD	n	M	SD	n	M	SD	N
Topics related to environmental justice can be included in most college courses	2.5	.71	2	4	-	1	3.3 3	1.1 6	3	1	-	1
	Denver, CO 80208			Denver, CO 80217			Colorado Springs, CO 80903			Grand Junction, CO 81501		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
Topics related to environmental justice can be included in most college courses	2	-	1	3.5	.71	2	4	-	1	2	-	1
	Flagstaff, AZ 86011			Albuquerque, NM 87108			Albuquerque, NM 87131			Socorro, NM 87801		
	M	SD	n	M	SD	n	M	SD	n	M	SD	N
Topics related to environmental justice can be included in most college courses	3	1.4 1	2	3	-	1	4	-	1	3	-	1
	Incline Village, NV 89451			Los Angeles, CA 90089			Claremont, CA 91711			Redlands, CA 92373		
	M	SD	n	M	SD	n	M	SD	n	M	SD	N
Topics related to environmental justice can be included in most college courses	4	-	1	3	.82	4	2.6 7	1.1 6	3	4	-	1
	San Francisco, CA 94132			El Cerrito, CA 94530			Hayward, CA 94542			Santa Cruz, CA 95060		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
Topics related to environmental justice can be included in most college courses	2	-	1	3	-	1	3	-	1	3	-	1
	Santa Cruz, CA 95064			Arcata, CA 95521			Sacramento, CA 95819			Hilo, HI 96720		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
Topics related to environmental justice can be included in most college courses	4	-	1	2	-	1	1	-	1	2	-	1

	Lake Oswego, OR 97034			Forest Grove, IL 97116			Portland, OR 97270			Cornwallis, OK 97330		
	M	SD	n	M	SD	n	M	SD	n	M	SD	N
Topics related to environmental justice can be included in most college courses	4	-	1	4	-	1	3	-	1	4	.00	2
	Eugene, OR 97403			Klamath Falls, OR 97601			Seattle, WA 98122			Berkeley, CA 94702		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
Topics related to environmental justice can be included in most college courses	3	1.4 1	4	4	-	1	4	-	1	2.9 5	1.1 3	140

APPENDIX D

QUALITATIVE DATA ANALYSIS

D-1. Qualitative Data Editing-Analysis-Style Rubric

See pocket at rear of document.

Table D-2. Qualitative Data Coding Outline

Question #1-In your own words, please define the term environmental justice. Please be as specific as possible.

The term refers to perceived or actual inequities in degree of exposure to pollutants or other byproducts of human activities. These inequities are usually associated with lower economic status, lower political power, and sometimes associated with race

- 1) Inequities
 - a) In degree of exposure to
 - 1. Pollutants
 - 2. Byproducts of human activities
 - b) Perceived or actual
 - c) Usually associated with
 - 1. Lower economic status
 - 2. Lower political power
 - 3. Sometimes with race

Categories:

- 1) Inequality of exposure/burden
- 2) Class
- 3) Race
- 4) Political power

Using the environment is such a way that it will be even better seven generations from now

- 1) Using environment/improving in such a way that it will be even better seven generations from now

Categories:

- 1) Improving environment for future generations

Unequal environmental exposure and unequal environmental benefits based on race, income, gender, or location

- 1) Unequal environmental exposure
 - a) Based on
 1. Race
 2. Income
 3. Gender
 4. Location
- 2) Unequal environmental benefits
 - b) Based on Race
 1. Income
 2. Gender
 3. Location

Categories:

- 1) Inequality of exposure/burden
- 2) Inequality of benefits
- 3) Race
- 4) Class
- 5) Gender
- 6) Location

The ability of all to live in a safe environment, free from concerns of pollution. If a group of people (neighborhood, town, county) are disproportionately affected by pollutants, they are in an unjust situation.

- 1) Ability of all to live
 - a) In safe environment
 - b) Free from concerns of pollution
- 2) Unjust situation
 - a) Group/neighborhood/town/county disproportionately affected by pollutants

Categories:

- 1) Safety
- 2) Location
- 3) Inequality of exposure/burden

different spatial impacts of environmental actions

- 1) different spatial impacts of environmental actions

Categories:

- 1) Location

In addition to distribution of toxic exposure, EJ includes respect for experience based knowledge, ability to continue key traditions and opportunity to participate fully in decision making for groups and individuals who are marginalized historically or in virtue of ethnic, racial or gender identities. I see food security and food sovereignty as components of EJ.

- 1) Components of EJ
 - a) Distribution of toxic exposure
 - b) Respect for experience based knowledge
 - c) Ability to continue key traditions
 - d) Opportunity to participate fully in decision making for groups and individuals who are marginalized historically or in virtue of ethnic, racial or gender identities
- 2) Closely related components
 - a) Food security
 - b) Food sovereignty

Categories:

- 1) Unequal distribution
- 2) Respect [cultural]
- 3) Political power
- 4) Food rights

the unequal distribution of pollution and toxic industrial residues and byproducts among geographic locations, communities and populations, usually more heavily impacting Native Americans and 1st Nations, minorities (Black and Hispanic), and rural poor whites

- 1) Unequal distribution of
 - a) Pollution
 - b) Toxic industrial residues
 - c) Byproducts
- 2) Unequal distribution by
 - a) Geographic location
 - b) Community
 - c) Population
- 3) Greatest impact
 - a) Native Americans
 - b) 1st Nations
 - c) Minorities
 1. Black
 2. Hispanic
 - d) Rural poor whites

Categories:

- 1) Unequal distribution
- 2) Location
- 3) Group
 - a) Native American/1st Nation
 - b) Black
 - c) Hispanic
 - d) Rural/poor/white

I do not agree with the current definition of environmental justice. The included term of environmental hazards is misappropriated and has nothing to do with the definition of environmental justice.

- 1) [failed to answer question]
- 2) Disagreement
 - a) [given] term of environmental hazards
 1. Misappropriated
 2. Has nothing to do with definition of EJ

Categories:

- 1) Disagreement

Environmental justice is about the unequal distribution of environmental goods and bads

- 1) Unequal distribution of
 - a) Environmental goods
 - b) Environmental bads

Categories:

- 1) Inequality of benefits
- 2) Inequality of exposure/burden

Blank

- 1) [refusal] blank

Categories:

- 1) refusal

Fair and just access to both environmental resources and to protection from environmental ills/pollution, regardless of race, religion, class, or other personal characteristics.

- 1) Fair and just access to
 - a) Environmental resources

- b) Protection from environmental ills/pollution
- 2) Fair and just access regardless of
 - a) Race
 - b) Religion
 - c) Class
 - d) Other personal characteristics.

Categories:

- 1) Inequality of benefits
- 2) Inequality of exposure/burden
- 3) Race
- 4) Religion
- 5) Class

unequal exposure of groups of people to chemicals/toxins

- 1) Unequal exposure of groups of people to chemicals/toxins

Categories:

- 1) Inequality of exposure/burden
- 2) Groups

EJ is the unequal burden of industrial society on the basis of race and socioeconomic status.

- 1) Unequal burden of industrial society on the basis of
 - a) Race
 - b) Socioeconomic status

Categories:

- 1) Inequality of exposure/burden
- 2) Class

An effort to correct the inequality associated with the adverse impacts of environmental harms on poor communities, and communities of color, both rural and urban

- 1) Effort to correct inequality associated with adverse impacts of environmental harms on
 - a) Poor communities
 - b) Communities of color
 - c) Affects rural/urban

Categories:

- 1) Inequality of exposure/burden
- 2) Class
- 3) Race

- 4) Urban
- 5) Rural

Environmental justice is the quest for equal distribution of environmental goods and bads across society.

- 1) Quest for equal distribution across society of
 - a) Environmental goods
 - b) Environmental bads

Categories:

- 1) Inequality of benefits
- 2) Inequality of exposure/burden

Disproportionate exposure to environmental risks based upon socioeconomic status

- 1) Exposure to environmental risks
 - a) Disproportionate
 - b) Based upon socioeconomic status

Categories:

- 1) Inequality of exposure/burden
- 2) Class

I've not the time to answer this or the following questions carefully.

- 1) [Refusal]

Categories:

- 1) Refusal

I am sorry, I am in the middle of finals and up to my eyeballs in grading. I do not have time for an essay exam.

- 1) [Refusal]

Categories:

- 1) Refusal

What a limited concept of environmental justice you have. What about justice to the billions (including whites) whose lives will be negatively affected by climate warming? How about the unborn? How about non-human environmental entities?

- 1) [emotion-anger]
- 2) [accusation] [questionnaire presents] limited concept of EJ
- 3) [others to include]
 - a) Those [including whites] negatively affected by climate warming
 - b) Unborn
 - c) Non-human environmental entities

Categories:

- 1) Emotion [anger]
- 2) Climate change
- 3) Unborn
- 4) Non-human environment

Notions of justice, environmental and otherwise, have been considered for centuries. Expecting a definition in a little box like this not realistic.

- 1) Justice has been considered for centuries
 - a) Environmental
 - b) Otherwise
- 2) [emotion] expecting definition in little box not realistic

Categories:

- 1) Emotion [anger]
- 2) Justice [broad category]

First, respect for the Earth and a sense of responsibility for protecting it to the best of our collective knowledge and understanding.

- 1) Respect for Earth
- 2) Sense of responsibility for protecting Earth

Categories:

- 1) Respect [for Earth]
- 2) Responsibility [for Earth]

This is one of the problems with your questionnaire. Environmental justice is the equalizing of risks due to environmental problems among all people, regardless of race, creed or socioeconomic class. Your definition on one of the early questions actually defined environmental injustice. Thus, that entire question is not one that you should use when evaluating your data.

- 1) [disagreement] [emotion]
- 2) Problem(s) with questionnaire
 - a) EJ is equalizing of risks due to environmental problems

1. Among all people
2. Regardless of
 - a. Race
 - b. Creed
 - c. Socioeconomic class
- b) [questionnaire] defines environmental injustice
- c) Question should not be used when evaluating data

Categories:

- 1) Disagreement
- 2) Emotion [anger]
- 3) Equalizing risk
- 4) Race
- 5) Creed
- 6) Class

The definition presented in this study was limited because it really addressed only issues in the USA rather than considering the entire world.

- 1) [disagreement]
- 2) [questionnaire] definition
 - a) Limited
 - b) Addressed only issues in USA
 - c) Did not consider entire world

Categories:

- 1) Disagreement
- 2) EJ not limited to USA

The definition you gave earlier in this survey is a good start, and mirrors the EPA's definition, but is incomplete. In addition to disproportionate exposure to hazards, environmental injustice also includes disproportionate access to environmental benefits such as green space and quiet nature. This is why I couldn't "Strongly Agree" with your initial definition at the beginning.

- 1) [questionnaire] definition
 - a) Good start
 - b) Mirrors EPA definition
 - c) [disagreement] incomplete
- 2) In addition to disproportionate exposure to hazards EJ also includes disproportionate access to environmental benefits
 - a) Green space
 - b) Quiet nature

Categories:

- 1) Definition incomplete/limited
- 2) Inequality of benefit
- 3) Inequality of exposure/burden

Environmental justice is the study of how societal choices affect the health and wellbeing of disadvantaged persons (both within the US, which seems to be the focus of this survey, and on a global scale in the developing world). It is a study of inequality of resources, opportunity, and fundamental access to a positive - or at least neutral - living environment.

- 1) EJ is study of how societal choices affect health/wellbeing of disadvantaged persons
 - a) Applies to
 1. US
 2. On global scale in developing world
- 2) EJ is study of inequality of
 - a) Resources
 - b) Opportunity
 - c) Fundamental access to a positive - or at least neutral - living environment.

Categories:

- 1) Health/wellbeing
- 2) Disadvantaged
- 3) EJ not limited to USA
- 4) Inequality of benefit

all people without access to equal awareness and protection in regard to inappropriate environmental risk, harm and exposure.

- 1) All people without access
 - a) Awareness
 - b) Protection
- 2) Concerns inappropriate environmental
 - a) Risk
 - b) Harm
 - c) Exposure

Categories:

- 1) Inequality of
 - a) Access
 - b) Awareness
 - c) Protection
 - d) Risk
 - e) Harm

f) Exposure/burden

Environmental Justice is narrowly defined as a social benefit focuses on fair benefits of environmental burdens and benefits

- 1) A social benefit
- 2) Focuses on fair benefits of environmental
 - a) Burdens
 - b) Benefits

Categories:

- 1) Inequality of exposure/burden
- 2) Inequality of benefit

Environmental justice involves the examination and correction of unequal exposure to pollutants and ill health effects based on race and/or socioeconomic class.

- 1) Involves
 - a) Examination and correction of unequal exposure to pollutants and ill health effects
 - b) Based on race and/or socioeconomic class

Categories:

- 1) Inequality of exposure/burden
- 2) Health/wellbeing
- 3) Race
- 4) Class

Environmental Justice is the quest to eliminate the unequal burden of environmental risk on a nation's population. This survey conflated environmental justice with environmental equity and environmental racism, which are not the same things. I disagreed with some statements because the term being used ("justice") was not what was meant. Justice is a goal, environmental racism and environmental inequity are the problems that one studies. Racism is difficult to prove because it relies on assumptions of bigotry, but the tangible evidence of the act is (usually) completely circumstantial.

- 1) Quest to eliminate unequal burden of environmental risk on a nation's population
- 2) [disagreement]
 - a) Survey conflates EJ with environmental equity and environmental racism (not same things)
 - b) Term being used ("justice") not what was meant
 1. Justice is goal
 2. Environmental racism and environmental inequity are problems that one studies.
 - c) Racism difficult to prove

1. relies on assumptions of bigotry
2. Tangible evidence of racism usually circumstantial

Categories:

- 1) Inequality of exposure/burden
- 2) Disagreement
- 3) Environmental equity
- 4) Environmental racism
- 5) EJ as a goal/ ideal

One of my problems with the survey was the definition was limited to hazards. Environmental justice also incorporates access to positive environmental resources, such as parks, and nature centers. One more comment on definitions, some of your statements limited the topic too much to race, it also concerns refugees, women and other disadvantaged or at risk populations.

- 1) [disagreement] definition limited to hazards
- 2) EJ also incorporates access to positive environmental resources
 - a) Parks
 - b) Nature centers
- 3) [disagreement] some [questionnaire] statements limited topic too much to race
 - a) Also concerns
 1. Refugees
 2. Women
 3. Other disadvantaged populations.
 4. Other at risk populations

Categories:

- 1) Disagreement
- 2) Inequality of benefit
- 3) Definition incomplete/limited
- 4) Refugees
- 5) Gender
- 6) Disadvantaged
- 7) Risk

Environmental hazards are felt more strongly by underserved populations (minorities and poor)

- 1) Environmental hazards felt more strongly by
 - a) Underserved populations
 1. minorities
 2. poor

Categories:

- 1) Environmental hazard
- 2) Inequality of exposure/burden
- 3) Race
- 4) Class

Environmental justice is an ideal societal condition in which the environmental benefits and burdens of the economy are evenly shared by all communities and individuals. It is also a political movement that seeks to correct past injustices in the distribution of environmental benefits and burdens, and to transform environmental decision-making processes to broaden self-determination to all communities.

- 1) Ideal societal condition
- 2) Environmental benefits and burdens of economy evenly shared by all
 - a) Communities
 - b) Individuals
- 3) Political movement that seeks to
 - a) Correct past injustices in distribution of environmental
 1. Benefits
 2. Burdens
 - b) Transform environmental decision-making processes to broaden self-determination to all communities.

Categories:

- 1) EJ as a goal/ ideal
- 2) Unequal benefit
- 3) Unequal exposure/burden
- 4) Location
- 5) Political movement
- 6) Correct past injustices
- 7) Decision-making
- 8) Self-determination

An equitable distribution of environmental benefits and disbenefits across society such that a person's age, gender, ethnicity, race, religion, or income has no impact on the benefits and disbenefits received.

- 1) Equitable distribution of environmental
 - a) Benefits
 - b) Dis-benefits
- 2) Equitable distribution across society
- 3) No impact on the benefits and dis-benefits received based on
 - a) Age,
 - b) Gender
 - c) Ethnicity
 - d) Race

- e) Religion
- f) Income

Categories:

- 1) Unequal benefit
- 2) Unequal exposure/burden
- 3) Age
- 4) Gender
- 5) Ethnicity
- 6) Race
- 7) Religion
- 8) Class

The unequal exposure to environmental harm, based on different ethnicity and income levels.

- 1) Unequal exposure to environmental harm
- 2) Based on ethnicity/income levels.

Categories:

- 1) Unequal exposure/burden
- 2) Ethnicity
- 3) Class

The fair and equitable distribution of environmental benefits/burdens

- 1) Fair/equitable distribution of environmental
 - a) Benefits
 - b) Burdens

Categories:

- 1) Unequal exposure/burden
- 2) Unequal benefit

Marginalized people suffering disproportionate negative environmental impacts.

- 1) Marginalized people suffering disproportionate negative environmental impacts

Categories:

- 1) Marginalized
- 2) Inequality of exposure/burden

Question #2-What do you know about environmental justice?

A moderate amount on a casual basis.

- 1) Knowledge amount/type/content
 - a) Moderate amount
 - b) Casual basis

Categories:

- 1) Moderate knowledge

That it is generally disregarded in favor of a robust economy

- 1) Knowledge amount/type/content
 - a) Generally disregarded in favor of robust economy

Categories:

- 1) EJ disregarded
- 2) Robust economy

This question is way to vague for me to say anything

- 1) [refusal] question too vague

Categories:

- 1) Refusal

The term environmental justice can be used as a social and political proxy for many other kinds of social injustices.

- 1) Knowledge amount/type/content
 - a) Can be used as social/political proxy for many other kinds of social injustices

Categories:

- 1) Social/political proxy
- 2) Social injustice

impacts vary over space

- 1) Knowledge amount/type/content
 - a) Impacts vary over space

Categories:

- 1) Location

I won't answer this question

- 1) [refusal] [emotion-anger]

Categories:

- 1) Refusal
- 2) Emotion [anger]

I know that severe inequities exist in what toxins, pollutants, and environmental impacts have taken place in the past and are taking place now due to industrial activities, primarily by large corporations.

- 1) Knowledge amount/type/content
 - a) Severe inequities exist in what toxins, pollutants, and environmental impacts
 1. Have taken place in past
 2. Are taking place now
 - b) Due to
 1. Industrial activities
 2. Large corporations (primarily)

Categories:

- 1) Inequality of exposure/burden
- 2) History
- 3) Industry/corporations

Because of the applied definition, not much.

- 1) Knowledge amount/type/content
 - a) Not much
- 2) [disagreement] with applied definition

Categories:

- 1) Low knowledge
- 2) Disagreement
- 3) Definition incomplete/limited

Enough to be an educated critic of this study! In general, this survey seems to miss two key points about environmental justice: 1) Environmental justice includes unequal access to environmental goods (parks, natural areas) as well as unequal exposure to environmental bads, and 2) the survey authors do not seem to know much about environmental justice in poor white rural populations, and so have structured the questions to seemingly preclude consideration of this group. Ask for example, why there are so few black and Latino visitors to national parks and wildernesses (environmental

goods), or study the case of asbestos poisoning of mostly white males from the mine in Libby, MT.

- 1) [failed to answer question]
- 2) [emotion] [disagreement] [accusation]
 - a) Educated critic of this study!
 - b) Survey seems to kiss two key points: EJ includes
 1. Unequal access to environmental goods
 - a. Parks
 - b. Natural areas
 2. Unequal exposure to environmental bads
 - c) Survey structured to preclude poor white rural populations
- 3) Responder asks
 - a) Why are there are so few Black and Latino visitors to national parks and wildernesses (environmental goods)?
 - b) [What about] the case of asbestos poisoning of mostly white males from the mine in Libby, MT?

Categories:

- 1) Failed to answer question
- 2) Emotion [accusation]
- 3) Disagreement
- 4) Inequality of benefit
- 5) Inequality of exposure/burden
- 6) Rural/poor/white
- 7) Black
- 8) Latino
- 9) White males

Blank

- 1) [refusal] blank

Categories:

- 1) Refusal

I know a fair amount. I teach it at the university level. I am particularly well-versed in the concept of food justice, a related idea.

- 1) Knowledge amount/type/content
 - a) Fair amount
 - b) Particularly well-versed in concept of food justice (related idea)

Categories:

- 1) Moderate knowledge
- 2) Food justice

it exists in the USA; it unequally affects social economically disadvantaged and minorities.

- 1) Knowledge amount/type/content
 - a) Exists in USA
 - b) Unequally affects minorities
 1. Socially/economically disadvantaged
 2. Minorities

Categories:

- 1) USA
- 2) Inequality of exposure/burden
- 3) Inequality of benefits
- 4) Class
- 5) Race

The seminal case was in Warren County, NC and one of the most vocal entities addressing this issue is the United Church of Christ.

- 1) Knowledge amount/type/content
 - a) Seminal case was in Warren County, NC
 - b) One of most vocal entities is United Church of Christ

Categories:

- 1) History
- 2) Religious/Christian response

Communities of color and poor rural and urban populations bear an inordinate burden associated with environmental harms such as industrial pollution and lead poisoning. Environmental justice has been encouraged through a Presidential executive order and some states have environmental justice initiatives or regulations. There is not consensus as to whether the unequal adverse impacts are the result of intentional discrimination or racism or other factors.

- 1) Knowledge amount/type/content
 - a) Some bear inordinate burden associated with environmental harms
 1. Communities of color
 2. Poor populations
 - a. Rural
 - b. Urban
 - b) Environmental harms include
 1. Industrial pollution
 2. Lead poisoning

- c) EJ encouraged through presidential executive order
- d) Some states have environmental justice initiatives or regulations
- e) No consensus as to whether unequal adverse impacts are result of
 - 1. Intentional discrimination
 - 2. Racism
 - 3. Other factors

Categories:

- 1) Inequality of exposure/burden
- 2) Communities of color
- 3) Rural
- 4) Urban
- 5) Industry/corporations
- 6) History
- 7) Intentional/unintentional
- 8) Racism

More than some people, but a lot less than the people who actively work on environmental justice issues.

- 1) Knowledge amount/type/content
 - a) More than some people
 - b) Lot less than people actively working on environmental justice issues

Categories:

- 1) Moderate knowledge

The basics

- 1) Knowledge amount/type/content
 - a) Basics

Categories:

- 1) Moderate knowledge

Na

- 1) [refusal] blank

Categories:

- 1) refusal

It can be anything you want it to be that is suggested by the two generalized terms; "Environmental" and "Justice". You have chosen one very specific interpretation that some professor has taught you to be correct.

- 1) [emotion] [failed to answer question]
 - a) Can be anything you want it to be
 - b) Can be anything suggested by generalized terms
 1. "Environmental"
 2. "Justice"
 - c) [accusation] You have chosen one very specific interpretation that some professor has taught you to be correct

Categories:

- 1) Failed to answer question
- 2) Emotion [accusation]

What life has taught me. That we're on Earth for a relative tiny amount of time and we need to have as little impact as possible to best serve those following us.

- 1) Knowledge amount/type/content
 - a) What life has taught me
 - b) We're on Earth for relative tiny amount of time
 - c) We need to have as little impact as possible to best serve those following us

Categories:

- 1) Impact
- 2) Improving environment for future generations

I understand both the actuality and the theory behind it. I also understand the market/business part of our world which will make it so that environmental justice in its ideal sense cannot be realized. Put a dump in a rich neighborhood and the rich move away...their houses devalue tremendously and the middle-class or poor move in...now you are back to having the dump in a lower socioeconomic neighborhood. The only answer is to not produce waste and chemicals that increase risk. As long as we prefer to live like we do, that won't happen.

- 1) Knowledge amount/type/content
 - a) Both actuality and theory behind it
 - b) Market/business part of world which will make it so that environmental justice in its ideal sense cannot be realized
 1. Put dump in rich neighborhood
 - a. Rich move away
 - b. Houses devalue
 - c. Middle-class/poor move in
 2. Back to having dump in lower socioeconomic neighborhood

3. Only answer is not produce waste and chemicals that increase risk
4. As long as we prefer to live like we do EJ won't happen

Categories:

- 1) High knowledge
- 2) Economy
- 3) EJ as a goal/ ideal
- 4) Class

It is not well practiced by anyone right now. Climate Change is the ultimate example, and in this case, the actions of Americans, regardless of race or income are harming the environment and future livelihood of peoples around the world. There are no innocents in America.

- 1) Knowledge amount/type/content
 - a) Not well practiced by anyone right now
 - b) Climate change is ultimate example
 - c) Actions of Americans, regardless of race or income are harming
 1. Environment
 2. Future livelihood of peoples around world
 - d) There are no innocents in America

Categories:

- 1) Climate change
- 2) Race
- 3) Class
- 4) Everyone bears blame

Little. I know that it is important, I know that it is a big question, and a critically urgent one. I know that it cuts across issues of race, societal standing, economics, and a wealth of other social issues, and that it is largely invisible to persons living in the developed world.

- 1) Knowledge amount/type/content
 - a) Little
 - b) Important
 - c) Big question
 - d) Critically urgent question
 - e) Cuts across issues of
 1. Race
 2. Societal standing
 3. Economics
 4. Wealth of other social issues

f) Largely invisible to persons living in developed world

Categories:

- 1) Low knowledge
- 2) Race
- 3) Class
- 4) Economics
- 5) Invisible

people are hurt unnecessarily

- 1) Knowledge amount/type/content
 - a) people are hurt unnecessarily

Categories:

- 1) Harm

This is a popular movement in the U.S. and supported more by advocacy groups that do not consider science and one of the fundamentals to be considered.

- 1) Knowledge amount/type/content
 - a) [emotion] [political outlook/belief]
 - b) Popular movement in U.S.
 - c) Supported by advocacy groups that do not consider science as one of fundamentals to be considered

Categories:

- 1) Emotion [political outlook/belief]
- 2) Political movement
- 3) Advocacy groups

Use local and national case studies, video clips and outside lecturers to bring these ideas into the classroom, especially environmental ethics.

- 1) [failed to answer question]
- 2) Materials used to bring EJ ideas into classroom (especially environmental ethics)
 - a) Local/national case studies
 - b) Video clips
 - a) Outside lecturers

Categories:

- 1) Failed to answer question

I have done research on the topics of environmental inequity and environmental racism (these are very geographical issues) and have taught environmental politics and policy for 20 years. I have accumulated a number of cases of environmental injustice that stem from toxics, agriculture and industrial activities in the US. The problems are similar when one looks at “natural” hazards as well ... the poor and non-white, politically marginal populations tend to reside in more dangerous spaces for many (but not all) hazards.

- 1) [failed to answer question directly]
- 2) [personal teaching attributes] I have...
 - a) Done research on environmental inequity/environmental racism
 1. very geographical issues
 - b) Taught environmental politics/policy
 - c) Accumulated cases of environmental injustice that stem from
 1. Toxics
 2. Agriculture
 3. Industrial activities in the US
- 3) “natural” hazard problems similar
 - a) Poor and non-white, politically marginal populations tend to reside in more dangerous spaces

Categories:

- 1) Failed to answer question
- 2) Location
- 3) Agriculture
- 4) Industry/corporations
- 5) Exposure to natural hazards
- 6) Class
- 7) Non-white
- 8) Marginalized

History-aware of industrial health through time, such as protections for mine workers in the 19th century Religious responses - such as natural saints Roots of western racism - such as Nazi treatment of minorities as anti-natural Some knowledge of regulations Knowledge or related social ethics literature, such as works on ecofeminism Models for response Have read lead social sciences literature such as works of Robert Bullard Have published on issues related to park access Climate change as issue, familiar with Christian responses

- 1) Knowledge amount/type/content
 - a) History
 1. Industrial health through time
 2. Protections for mine workers in 19th Century
 - b) Religious responses
 1. Natural saints

- c) Roots of western racism
 - 1. Nazi treatment of minorities as anti-natural
- d) Some knowledge of regulations
- e) Knowledge of related social ethics literature
 - 1. Works on ecofeminism
 - 2. Models for response
- f) Have read lead social sciences literature
 - 1. Works of Robert Bullard
 - 1. Have published on issues related to park access
- g) Climate change
- h) Familiar with Christian responses

Categories:

- 1) History
- 2) Religious/Christian response
- 3) Environmental law
- 4) Ecofeminism
- 5) Response models
- 6) Robert Bullard
- 7) Climate change

It is a structural problem

- 1) Knowledge amount/type/content
 - a) Structural problem

Categories:

- 1) Structural problem

EJ in the United States is one of my areas of expertise. My scholarship addresses the history of environmental justice and injustice, as well as present-day EJ struggles. I'm not sure how much I should write here, since I could go on at great length, but I will say that my particular expertise is in the history of African-American environmental struggles throughout the twentieth century even before the term "environmental justice" was coined. I also know quite well struggles among low-income whites in urban areas (usually European immigrants in the early twentieth century). The environments I know best are urban residential environments and the environment of homes/housing themselves. I am also very interested in feminist and critical race theory and their application to EJ; I am also very interested in community-based participatory research.

- 1) Knowledge amount/type/content
- 2) EJ in the United States is one of responder's areas of expertise
 - a) History of environmental justice/ injustice
 - 1. In particular African-American environmental struggles

- a. Throughout twentieth century
 - b. Even before term “environmental justice” was coined
 - 2. Struggles among low-income whites in urban areas (usually European immigrants in early twentieth century)
- b) Present-day EJ struggles
- c) Environments responder knows best
 - 1. Urban residential
 - 2. Homes/housing themselves
- 3) Responder’s other interests
 - a) Application of feminist/critical race theory to EJ
 - b) Community-based participatory research

Categories:

- 1) History
- 2) Black
- 3) Urban low income whites
- 4) Urban
- 5) Residential
- 6) Feminist theory
- 7) Critical race theory
- 8) Community-based participatory research

This question is too open ended to answer. I know the US has a less than enviable record in ensuring environmental justice is realized across all demographics.

- 1) Knowledge amount/type/content
 - a) US has a less than enviable record in ensuring environmental justice is realized across all demographics
- 2) [refusal] question too open ended

Categories:

- 1) Poor environmental record
- 2) Refusal

It is an absolute reality in virtually every part of the state in which I live. The consequences are profound in terms of health, economic opportunity, and quality of life.

- 1) Knowledge amount/type/content
 - a) Absolute reality in virtually every part of [respondent’s] state
 - b) Consequences profound in terms of
 - 1. Health
 - 2. Economic opportunity
 - 3. Quality of life

Categories:

- 1) Profound consequences
- 2) Health/wellbeing
- 3) Economic opportunity

A lot

- 1) Knowledge amount/type/content
 - a) A lot

Categories:

- 1) High knowledge

Question #3-What populations are affected by environmental justice? In what ways? Give as much detail as possible.

Poorer populations cannot and do not complain about possible exposures. Or if they do complain they have less ability to affect change.

- 1) Poorer populations
 - a) Cannot/do not complain about possible exposures
 - b) If they do complain they have less ability to effect change

Categories:

- 1) Class
- 2) Political power

See definition above [This question is way to vague for me to say anything]

- 1) [refusal] question too vague

Categories:

- 1) Refusal

both urban and rural areas are particularly prone to legacy environmental pollution issues.

- 1) both urban and rural areas are particularly prone to legacy environmental pollution issues

Categories:

- 1) Urban
- 2) Rural

income and race are important, but any group could be affected, and not know it

- 1) Income and race are important
- 2) Any group could be affected and not know it

Categories:

- 1) Class
- 2) Race
- 3) Group

Key populations include racial minorities, especially when conjoined with class disparities. In North America, tribal groups are affected, even structurally due to tribal law. Globally women are clearly affected, especially rural women, who disproportionately manage natural resources. In the era of climate change, entire regional populations are affected by environmental justice. Here the issue is less one of individual disparities in income as historical power relationships. EJ is then related to the legacy of colonialism.

- 1) Key populations include racial minorities, especially when conjoined with class disparities
- 2) In North America, tribal groups are affected, even structurally due to tribal law.
- 3) Globally women are clearly affected
 - a) Especially rural women
 - b) Rural women disproportionately manage natural resources
- 4) In the era of climate change, entire regional populations are affected
- 5) Here [climate change?] issue is less about individual disparities in income
 - a) Historical power relationships
 - b) Related to legacy of colonialism

Categories:

- 1) Race
- 2) Class
- 3) Gender
- 4) Rural
- 5) Climate change
- 6) History
- 7) Colonialism

Poor rural whites in Appalachia due to coal mining, especially mountain top removal; middle class whites in rural areas with extensive hydraulic fracturing and natural gas extraction; poor blacks and hispanics living in neighborhoods adjacent to large industrial manufacturing facilities (paper mills, refineries, mines, etc), Native Americans and 1st Nations on reservations and in designated communities often near toxic waste sites.

- 1) Poor rural whites in Appalachia
 - a) Due to coal mining

- b) Especially mountain top removal
- 2) Middle class whites in rural areas with extensive
 - a) Hydraulic fracturing
 - b) Natural gas extraction
- 3) Poor blacks and Hispanics living in neighborhoods adjacent to large industrial manufacturing facilities
 - a) Paper mills
 - b) Refineries
 - c) Mines
- 4) Native Americans and 1st Nations on reservations and in designated communities often near toxic waste sites

Categories:

- 1) Poor rural whites
- 2) Resource extraction
- 3) Middle class whites
- 4) Paper mills
- 5) Refineries
- 6) Blacks
- 7) Hispanics
- 8) Native Americans/1st Nations
- 9) Location

ALL populations who live in affected areas, regardless of race, color, creed, income, or religion.

- 1) [emotion] ALL
- 2) ALL populations who live in affected areas, regardless of race, color, creed, income, or religion

Categories:

- 1) Emotion [agreement]
- 2) Location
- 3) Race
- 4) Color
- 5) Creed
- 6) Class
- 7) Religion

All the populates in the study are affected, but I would also include gender, especially in areas of the global south.

- 1) All populations in study
- 2) [responder] would also include gender, especially in areas of the global south

Categories:

- 1) All people affected
- 2) Gender
- 3) Global south

Everyone is affected. But some of these questions seemed to assume that environmental justice is mostly about race. I think this is a mistake. Rural whites who have to work in sub-standard, dangerous workplaces and live in trailers and shacks, are suffering from environmental kind of oppression. In our area, especially since the recession, the food banks can't keep up and the high price of heating oil has contributed to a lot more poverty, including child poverty. This drives people into dangerous, dirty jobs, and increases their exposure to toxic chemicals and other hazards.

- 1) Everyone is affected
- 2) [disagreement]
 - a) Questionnaire assumes EJ mostly about race
 1. Mistake
 2. Rural whites affected as well
 - b) Examples [concerning rural whites] [emotion]
 1. Work in sub-standard, dangerous workplaces
 2. Live in trailers and shacks
 3. Suffering from environmental kind of oppression
 4. [In responder's area] especially since recession
 - a. Food banks can't keep up
 - b. High price of heating oil contributes to poverty (including child poverty)
 - c. [poverty]
 - i. Drives people into dangerous, dirty jobs
 - ii. Increases exposure to toxic chemicals/other hazards

Categories:

- 1) All people affected
- 2) Disagreement
- 3) Race
- 4) Poor rural whites
- 5) Poverty

Blank

- 1) [refusal] blank

Categories:

- 1) Refusal

All population are affected by environmental justice. Environmental injustice disproportionately affects people of color, women, and lower income brackets.

- 1) All populations are affected
- 2) Disproportionately affects
 - a) People of color
 - b) Women
 - c) Lower income brackets.

Categories:

- 1) All people affected
- 2) Race
- 3) Gender
- 4) Class

it unequally affects social economically disadvantaged and minorities.

- 1) Unequally affects
 - a) Social economically disadvantaged
 - b) Minorities

Categories:

- 1) Class
- 2) Minorities

People of color and people of low socioeconomic status. These populations bear significantly more impacts from industrial society than do wealthy whites.

- 1) People of color/low socioeconomic status
 - a) These populations bear significantly more impacts from industrial society than do wealthy whites

Categories:

- 1) Race
- 2) Class
- 3) Inequality of exposure

Poor communities, both urban and rural. Exposure to industrial pollution, agricultural pesticides and herbicides, poor wastewater treatment, contaminated water supplies, lead poisoning (especially in young children)

- 1) Poor communities
 - a) Urban

- b) Rural
- 2) [poor communities experience] exposure to
 - a) Industrial pollution
 - b) Agricultural pesticides/herbicides
 - c) Poor wastewater treatment
 - d) Contaminated water supplies
 - e) Lead poisoning (especially in young children)

Categories:

- 1) Class
- 2) Location
- 3) Rural
- 4) Urban
- 5) Inequality of exposure
- 6) Agriculture
- 7) Water issues
- 8) Lead poisoning

Oppressed populations who lack in political capital. In the US, Native Americans, Latinos, African Americans, and the poor. Women and children as well.

- 1) Populations
 - a) Oppressed
 - b) lack in political capital
- 2) In US
 - a) Native Americans
 - b) Latinos
 - c) African Americans
 - d) The poor
 - e) Women
 - f) Children

Categories:

- 1) Oppressed populations
- 2) Political power
- 3) Native Americans
- 4) Hispanics
- 5) Blacks
- 6) Gender
- 7) Children

All populations, but to varying degrees

- 1) All populations
 - a) But to varying degrees

Categories:

- 1) All persons affected
- 2) Inequality of exposure

Na

- 1) [refusal] n/a

Categories:

- 1) Refusal

All

- 1) All

Categories:

- 1) All persons affected

The weakest ej is directly related to poverty and lack of knowledge. In addition to the tragedy of health effects is the equally severe loss of the talent that poverty steals from us.

- 1) Weakest
- 2) Directly related to
 - a) Poverty
 - b) Lack of knowledge
- 3) Tragedy of health effects
- 4) Equally severe loss of talent that poverty steals from us

Categories:

- 1) Weak
- 2) Poverty
- 3) Lack of knowledge
- 4) Health/wellbeing
- 5) Loss of talent

Lower socioeconomic groups are those mainly affected. In the United States, blacks and Hispanics make up a higher proportion of individuals in this group, thus it appears racial. In reality, well-to-do people of all races will not live in areas of higher risk. Thus, as soon as you get to a higher socioeconomic standing, you move out.

- 1) Mainly lower socioeconomic groups
- 2) In United States appears racial [disagreement]
 - a) Blacks/Hispanics make up a higher proportion of this group
 - b) But well-to-do people of all races will not live in areas of higher risk

- c) As you get to a higher socioeconomic standing, you move out

Categories:

- 1) Class
- 2) Disagreement
- 3) Race
- 4) Black
- 5) Hispanic
- 6) Intentional/unintentional
- 7) Economics

Pacific Islands, river delta populations, and Africa are particularly vulnerable to Climate change. Toxic substances are also being exported from the US to 3rd world nations. It is no more just to dump these in another country as in the poor areas of the USA.

- 1) Those vulnerable to climate change (in particular)
 - a) Pacific Islands
 - b) River delta populations
 - c) Africa
- 2) Toxic substances exported from US to 3rd world nations
 - a) No more just to dump in another country as in poor areas of USA

Categories:

- 1) Climate change
- 2) Equity
- 3) Export of toxins

The health of people living in poor communities is directly affected. Everyone is affected by the poverty, political turmoil, and social stratification that the problem creates.

- 1) Health of people living in poor communities directly affected
- 2) Everyone affected by problem
 - a) Poverty
 - b) Political turmoil
 - c) Social stratification

Categories:

- 1) Health/wellbeing
- 2) Class
- 3) Community
- 4) Poverty
- 5) Political turmoil

all but certainly those without knowledge or influence

- 1) All
- 2) Those without knowledge/influence

Categories:

- 1) All persons affected
- 2) Lack of knowledge
- 3) Political power

All populations

- 1) All populations

Categories:

- 1) All persons affected

Rural and urban poor, regardless of race, urban persons of color and rural agricultural laborer are strongly affected by environmental injustice as they do not have the capital, knowledge or capacity to fight for enforcement of existing laws that should protect them nor undo the damage done by bankrupt corporations in the past.

- 1) Rural and urban poor (regardless of race)
- 2) Urban persons of color
- 3) Rural agricultural laborer
 - a) Do not have the ability to fight for enforcement of existing laws that should protect them
 1. Capital
 2. Knowledge
 3. Capacity
 - b) Do not have ability to undo past damages done by bankrupt corporations

Categories:

- 1) Rural
- 2) Urban
- 3) Class
- 4) Race
- 5) Political power
- 6) Lack of knowledge
- 7) Industry/corporations

Usually poorer and minority populations tend to be affected by environmental pollution more than whites and the wealthy because of their inability to afford or achieve life in healthier environments and their personal health vulnerabilities due to an unjust health care system.

- 1) Poorer/minority populations
 - a) Affected by environmental pollution more than whites/wealthy
 - b) Unable to afford or achieve life in healthier environments
 - c) Vulnerable due to unjust health care system

Categories:

- 1) Inequality of exposure
- 2) Health/wellbeing

Many- women in general in relationship to chemical exposures and endocrine disrupters
Ethnic minorities either by neighborhood or by profession, such as farm workers
Cultures at risk from climate change, such as Pacific Islanders, residents of the Sahel
The poor in general Agriculturalists in general

- 1) Many
- 2) Women in general
 - a) Related to chemical exposures and endocrine disrupters
- 3) Ethnic minorities
 - a) By neighborhood
 - b) By profession [example] farm workers
- 4) Cultures at risk from climate change
 - a) Pacific Islanders
 - b) Residents of Sahel
- 5) Poor in general
- 6) Agriculturalists in general

Categories:

- 1) Many
- 2) Gender
- 3) Health/wellbeing
- 4) Ethnicity
- 5) Location
- 6) Agriculture
- 7) Profession
- 8) Climate change
- 9) Poverty

Poor people (minorities) - they live in substandard housing, in polluted areas (near industry, etc) with bad air and potentially bad water.

- 1) Poor people (minorities)
 - a) Live in/with
 1. Substandard housing
 2. Polluted areas (near industry, etc)
 3. Bad air

4. Potentially bad water

Categories:

- 1) Class
- 2) Minorities
- 3) Inequality of exposure/burden
- 4) Air pollution
- 5) Water pollution

As questions above suggest, everyone is affected by EJ, but the most direct effects in the US are felt by people of color and low-income (it would be more accurate to say that they are affected by environmental injustice). In general, people of color have been exposed to more toxic waste sites, more ambient air pollution, more pesticides, worse housing conditions, more pests, more lead paint and other such contaminants, than white Americans. People of color also have suffered poor access to political processes for environmental decision-making, and their environmental experiences and values have been mis-represented and undervalued by mainstream environmentalists.

- 1) Everyone
- 2) In US most directly affected
 - a) People of color
 - b) Low-income
- 3) [disagreement] more accurate to say affected by environmental injustice
- 4) In general, people of color have been exposed more than white Americans to more
 - a) Toxic waste sites
 - b) Ambient air pollution
 - c) Pesticides
 - d) Worse housing conditions
 - e) Pests,
 - f) Lead paint
 - g) Other such contaminants
- 5) People of color
 - a) Suffered poor access to political processes for environmental decision-making
 - b) Have had their environmental experiences and values mis-represented and undervalued by mainstream environmentalists.

Categories:

- 1) All persons affected
- 2) People of color
- 3) Class
- 4) Disagreement
- 5) Air pollution
- 6) Pesticides

- 7) Housing inequities
- 8) Lead poisoning
- 9) Political power
- 10) Decision-making
- 11) Mis-representation/undervaluing of experience/values
- 12) Mainstream environmentalists

All populations are affected, either positively or negatively, by the environmental quality where they live, work, and recreate

- 1) All populations (positively/negatively) by environmental quality where they
 - a) Live
 - b) Work
 - c) Recreate

Categories:

- 1) All persons affected
- 2) Inequality of exposure/burden
- 3) Inequality of benefit

Lower income persons are more affected; this generally means that persons who are non-white are more affected

- 1) Lower income persons
- 2) Generally means non-whites more affected

Categories:

- 1) Class
- 2) Race

Urban poor

- 1) Urban poor

Categories:

- 1) Urban
- 2) Class

No, I do not have time. All kinds of marginalized people.

- 1) All kinds of marginalized people
- 2) [refusal] No, I do not have time

Categories:

- 1) Refusal

- 2) Marginalized

Question #4-In general, what do the students which you instruct know about environmental justice? Give examples if applicable.

A few students are concerned about this issue, but primarily I teach geoscience students who are not specifically concerned with these issues.

- 1) Level/quality of student knowledge/interest
 - a) Primarily teaches geosciences
 - 1. A few students are concerned
 - 2. [these students] are not specifically concerned with these issues.

Categories:

- 1) Lack of interest/concern

We compare relative “footprints” and discuss how these can be decreased. Students may have a glimmer of an idea of EJ--but many want to know more and incorporate it into their lives

- 1) Level/quality of student knowledge/interest
 - a) May have a glimmer of an idea
 - b) Many
 - 1. Want to know more
 - 2. Want to incorporate EJ into their lives
 - c) In class
 - 1. Compare relative “footprints”
 - 2. Discuss how “footprints” can be decreased

Categories:

- 1) Low knowledge
- 2) High interest

not much, although some have lived it

- 1) Level/quality of student knowledge/interest
 - a) Not much
 - b) Some have lived it

Categories:

- 1) Low knowledge
- 2) Lived knowledge

Students should know about using their critical thinking skills to see whether it is poverty or race that is the problem with environmental justice.

- 1) [failed to answer question]
- 2) Students should use critical thinking skills to parse problem of EJ
 - a) Poverty?
 - b) Race?

Categories:

- 1) Failed to answer question
- 2) Critical thinking skills
- 3) Poverty
- 4) Race
- 5) Intentional/unintentional

don't quite see it as an easy action item

- 1) Level/quality of student knowledge/interest
 - a) Do not see EJ as an easy action item

Categories:

- 1) Failure/inability to see solutions

Students tend to think of this narrowly in terms of exposure to toxic materials. They don't typically think globally, but they readily make the transition when examples are presented to them.

- 1) Level/quality of student knowledge/interest
 - a) Tend to think of EJ narrowly
 - b) Think in terms of exposure to toxic materials.
 - c) Don't typically think globally
 - d) Readily make transition when examples presented

Categories:

- 1) Low knowledge
- 2) Narrow/stereotypic thinking
- 3) High interest

Most have very little idea. Some have an awareness of watershed effects from nonpoint source pollution (dead zone in Gulf of Mexico as an extreme example).

- 1) Level/quality of student knowledge/interest
 - a) Most very little
 - b) Some awareness of watershed effects from nonpoint source pollution
 1. [example] dead zone in Gulf of Mexico

Categories:

- 1) Low knowledge
- 2) Have knowledge of related information

Nothing

- 1) Level/quality of student knowledge/interest
 - a) Nothing

Categories:

- 1) Low knowledge

My classes contain large numbers of rural working class white students. In many cases their entire lives have been attenuated by unequal access to environmental goods and unfair exposure to environmental bads.

- 1) Level/quality of student knowledge/interest
 - a) Large numbers of rural working class white students
 1. Know by living
 2. Unequal access to environmental goods
 3. Unfair exposure to environmental bads.

Categories:

- 1) Lived knowledge
- 2) Inequality of exposure/burden
- 3) Inequality of benefit

Blank

- 1) Refusal [blank]

Categories:

- 1) Refusal

Very little until they take a course

- 1) Level/quality of student knowledge/interest
 - a) Very little until they take a course

Categories:

- 1) Low knowledge

Very little. I doubt few if any could give a good working definition.

- 1) Level/quality of student knowledge/interest
 - a) Very little
 - b) Most could not give working definition

Categories:

- 1) Low knowledge

Very little, if anything at all. Most have never even heard the term. This is true even of graduate students.

- 1) Level/quality of student knowledge/interest
 - a) [undergraduates/graduates] know very little/nothing
 - b) Most have never heard term.

Categories:

- 1) Low knowledge

very little

- 1) Level/quality of student knowledge/interest
 - a) Very little

Categories:

- 1) Low knowledge

They don't know a lot. They may understand the concept of NIMBY's and how environmental justice is when you have something "in your backyard" that poisons you or your environment. They are very familiar with the issue of fracking because that exists in many of their communities.

- 1) Level/quality of student knowledge/interest
 - a) Little
 - b) May understand NIMBY
 - c) Many familiar with fracking [local issue]

Categories:

- 1) Low knowledge
- 2) NIMBY
- 3) Fracking

Little

- 1) Level/quality of student knowledge/interest
 - a) Little

Categories:

- 1) Low knowledge

Little

- 1) Level/quality of student knowledge/interest
 - a) Little

Categories:

- 1) Low knowledge

I think their views have been broadened, their confidence in understanding human interactions with Earth processes have been improved.

- 1) Level/quality of student knowledge/interest
 - a) views broadened
 - b) Confidence in understanding human interactions with Earth processes improved.

Categories:

- 1) Knowledge/understanding improvement

They know what I just stated in the previous questions. [This is one of the problems with your questionnaire. Environmental justice is the equalizing of risks due to environmental problems among all people, regardless of race, creed or socioeconomic class. Your definition on one of the early questions actually defined environmental injustice. Thus, that entire question is not one that you should use when evaluating your data.] [I understand both the actuality and the theory behind it. I also understand the market/business part of our world which will make it so that environmental justice in its ideal sense cannot be realized. Put a dump in a rich neighborhood and the rich move away...their houses devalue tremendously and the middle-class or poor move in...now you are back to having the dump in a lower socioeconomic neighborhood. The only answer is to not produce waste and chemicals that increase risk. As long as we prefer to live like we do, that won't happen.] [Lower socioeconomic groups are those mainly affected. In the United States, blacks and Hispanics make up a higher proportion of individuals in this group, thus it appears racial. In reality, well-to-do people of all races will not live in areas of higher risk. Thus, as soon as you get to a higher socioeconomic standing, you move out.]

- 1) [failed to answer question]
- 2) [Disagreement]
 - a) Environmental justice is equalizing of risks due to environmental problems among all people, regardless of race, creed or socioeconomic class
 - b) [definition given in questionnaire] defines environmental injustice
- 3) [emotion] anger
- 4) environmental justice in ideal sense cannot be realized
 - a) Put dump in rich neighborhood
 1. Rich move away

2. Houses devalue
3. Middle-class/poor move in
4. Back to having dump in lower socioeconomic neighborhood
- b) Only answer is to not produce waste/chemicals that increase risk.
 1. As long as [we] prefer to live like we do, that won't happen
- c) Lower socioeconomic groups mainly affected
 1. In United States Blacks/Hispanics make up high proportion of affected
 2. Appears racial
- d) Well-to-do people of all races will not live in areas of higher risk
 1. When attain higher socioeconomic standing-move out

Categories:

- 1) Failed answer question
- 2) Disagreement
- 3) Equalizing of risks
- 4) All persons affected
- 5) Race
- 6) Creed
- 7) Class
- 8) Definition inaccurate
- 9) EJ as a goal/ ideal
- 10) Inequality of exposure/burden
- 11) Middle class
- 12) Neighborhood
- 13) Preferred lifestyle
- 14) Blacks
- 15) Hispanics
- 16) Intentional/unintentional
- 17) Wealth

I use 6 case studies/role playing games that I have authored that show students both the science and the complexity of these issues

- 1) [failed to answer question]
 - a) Uses
 1. Case studies
 2. [self-authored] role playing games
 - b) Teaching goals-show students
 1. Science of [EJ] issues
 2. Complexity of [EJ] issues

Categories:

- 1) Failed to answer question
- 2) Science

3) Complexity/interconnection

Nothing. They tend to start out believing that it doesn't exist, then transition to discomfort and guilt, and then to apathy. Some students hear that it exists and become deeply concerned, but are stymied by the complexity of the issue.

- 1) Level/quality of student knowledge/interest
 - a) Nothing
- 2) Stages of progression [when presented with EJ]
 - a) Believe it does not exist
 - b) Feel discomfort/guilt
 - c) Apathy
 1. Stymied by complexity of issue.

Categories:

- 1) Low knowledge
- 2) Apathy
- 3) Complexity/interconnection

its unfair

- 1) Level/quality of student knowledge/interest
 - a) Unfair

Categories:

- 1) Inequality of benefit
- 2) Inequality of exposure/burden

Most discussions are held in Introductory Envir. Science classes or courses dealing in Political Science

- 1) [failed to answer question]
- 2) Most discussions in
 - a) Introductory environmental science
 - b) Political science

Categories:

- 1) Failed to answer question

Nothing to start with.

- 1) Level/quality of student knowledge/interest
 - a) Nothing to start with

Categories:

- 1) Low knowledge

They tend not to know much. They tend to lack the personal desire to look into the living spaces of the marginalized populations. Environmental exposures tend to be not just chronic conditions but are evident during acute events and students usually require the dramatic events to become aware of the chronic, unhealthy conditions of some segments of our society.

- 1) Level/quality of student knowledge/interest
 - a) Not much
 - b) Lack personal desire to look at lives of marginalized
- 2) Environmental exposures tend to be chronic
 - a) Often students require dramatic events to become aware of the chronic

Categories:

- 1) Low knowledge
- 2) Low interest

They are actually relatively well informed about the poor, due to Christian interest in ministries to the disadvantaged Their knowledge of interaction between race and economics, etc is weaker

- 1) Level/quality of student knowledge/interest
 - a) Relatively well informed about poor
 1. Due to Christian interest in ministries to disadvantaged
 - b) Knowledge of interaction between race and economics –weaker

Categories:

- 1) High knowledge
- 2) High interest
- 3) Religious ties
- 4) Race
- 5) Economics

Blank

- 1) Refusal [blank]

Categories:

- 1) refusal

Not sure... they bring it up sometimes- regarding climate change and who will be most affected. They don't call it "environmental justice" but we talk about inadequate policies and who is benefiting (or not).

- 1) Level/quality of student knowledge/interest
 - a) Not sure
- 2) Usually addressed in regards to climate change
 - a) Want to know who will be affected
 - b) Framed as
 1. Inadequate policies
 2. Who is benefiting (or not).

Categories:

- 1) Unsure about knowledge
- 2) Climate change
- 3) Policy
- 4) Inequality of benefit
- 5) Inequality of exposure/burden

In general, students have a broad-brush, stereotypical understanding of EJ. They tend to assume that African-Americans are more exposed because they are poorer in general; they are much less aware of the continuing effects of racial segregation. They also tend to focus on quantifiable distributional injustices when they talk about EJ, and not so much on procedural and representational or symbolic injustices.

- 1) Level/quality of student knowledge/interest
 - a) Broad-brush
 - b) Stereotypical
 - c) Assume African-Americans more exposed because poorer in general
 - d) Much less aware of continuing effects of racial segregation
 - e) Focus on quantifiable distributional injustices
 - f) [fail to focus] on procedural
 1. Representational injustices
 2. Symbolic injustices

Categories:

- 1) Low knowledge
- 2) Stereotypical knowledge
- 3) Assumptions
- 4) Blacks
- 5) Class
- 6) Policy

I teach environmental economics and focus on the inequitable results that can follow from environmental policies that are efficient (eg a carbon tax harms low income people disproportionately). I require students to weigh the micro-level impacts of macro-level policies that are designed to improve the environment at least cost. I also expect students to understand that it is possible to devise policies to offset the inequities without undermining the efficiencies of the solution (eg, help low income households afford low

polluting transportation - public or private - to reduce the percent of their income they pay on a carbon tax.)

- 1) [failed to answer question]
- 2) Responder's teaching focus
 - a) Environmental economics
 - b) Inequitable results that can follow from efficient environmental policies
 1. [example] carbon tax harms low income people disproportionately
 - c) Weigh the micro-level impacts of macro-level policies designed to improve environment at least cost
 - d) Possible to devise policies to offset inequities without undermining efficiencies of solution
 1. [example] help low income households afford low polluting transportation - public or private - to reduce percent of income paid on carbon tax

Categories:

- 1) Failed to answer question
- 2) Economics
- 3) Policy
- 4) Inequality of exposure/burden
- 5) Risk analysis

Many know about environmental justice. Not all.

- 1) Level/quality of student knowledge/interest
 - a) Many know
 - b) Not all

Categories:

- 1) High knowledge

Very little and this is especially disheartening in a poor state like New Mexico.

- 1) Level/quality of student knowledge/interest
 - a) Very little
 - b) Disheartening in poor state (New Mexico)

Categories:

- 1) Low knowledge
- 2) Poverty

Probably little. It is not a topic of much intellectual interest to me. I got into this to work on natural resource protection. Not people protection. And I have a good sense of the interconnections.

- 1) Level/quality of student knowledge/interest
 - a) [unsure] probably little
- 2) Personal interests [of responder]
 - a) Not a topic of much intellectual interest
 - b) Work to protect natural resources
 - c) Do not work to protect people
 - d) Have good sense of interconnections

Categories:

- 1) Unsure about knowledge
- 2) Responder disinterest
- 3) Complexity/interconnection

Question #5-Should students know about environmental justice? Why or why not?

of course, all citizens should know about this issue, and try to be sensitive to it in both personal and professional capacities.

- 1) Agree [enthusiasm-of course]
- 2) All citizens should
 - a) Know about EJ
 - b) Be sensitive in
 1. Personal capacities
 2. Professional capacities

Categories:

- 1) Agreement
- 2) Citizens/citizenship
- 3) Sensitivity

Yes--we use or abuse the earth and its resources depending on our frame of reference.

- 1) Agree
- 2) Use/abuse earth depending on our frame of reference

Categories:

- 1) Agreement
- 2) Worldview

Yes; social justice is an important part of a sustainable future.

- 1) Agree
- 2) Social justice important part of sustainable future

Categories:

- 1) Agreement
- 2) Social justice
- 3) Sustainable future

As part of being citizens, students should know about these issues. We, as responsible citizens, need to prioritize our tax dollars for all sorts of social justice reasons. If students do not know that environmental justice is an issue, then they can't make responsible, informed decisions.

- 1) Agree
- 2) Need to know
 - a) As part of citizenship
 - b) As responsible citizens
 - c) To [know how to] prioritize tax dollars for differing social justice reasons
 - d) Making responsible, informed decisions

Categories:

- 1) Agreement
- 2) Citizens/citizenship
- 3) Responsibility
- 4) Social justice
- 5) Policy
- 6) Informed decision-making

Yes

- 1) Agree

Categories:

- 1) agreement

This is a basic notion for being policy and ethically literate in today's world.

- 1) Agree [assumed]
- 2) EJ basic notion for being literate in today's world
 - a) Policy [politically?]
 - b) Ethically

Categories:

- 1) Agreement
- 2) Literacy/awareness

- 3) Policy
- 4) Ethics

Yes, because it is still affecting them and their families indirectly even if they have not experienced it first hand. Also they need the awareness to want to affect positive change in both reducing toxic emissions and pollutants, as well as cleanup and remediation of contaminated areas.

- 1) Agree
- 2) Reasoning
 - a) Affects all directly or indirectly
 - b) Need awareness to create desire for positive change
 1. To reduce toxic emissions/pollutants
 2. For cleanup/remediation of contaminated areas

Categories:

- 1) Agreement
- 2) All people affected
- 3) Literacy/awareness

Yes, if defined correctly!

- 1) Agree
- 2) If defined correctly! [emotion]

Categories:

- 1) Agreement
- 2) Emotion [anger]
- 3) Definition incomplete/limited/wrong

Yes

- 1) Agree

Categories:

- 1) Agreement

They should. But I think that if we were going to make one environmental topic mandatory for all majors, including non-majors and professional preparation programs like accounting and nursing, it should be climate change

- 1) Agree
- 2) Disagree

- a) More important mandatory course for all non-majors
- b) Climate change

Categories:

- 1) Agreement
- 2) Climate change

yes. Everyone is at either or both ends of the cause-effect line and should be aware of how their actions impact/interact with others

- 1) Agree
- 2) Everyone
 - a) At either/or both ends of cause-effect line
 - b) Should be aware of how own actions impact/interact with others

Categories:

- 1) Agreement
- 2) All people affected
- 3) Awareness of impact of own actions

yes. It is about fundamental freedoms and liberties.

- 1) Agree
- 2) About fundamental freedoms and liberties

Categories:

- 1) Agreement
- 2) Fundamental freedoms/liberties

Yes, its important to realize what is going on in this world. Lots of ignorance relating to this topic.

- 1) Agree
- 2) Important to realize what is going on in this world
- 3) Lots of ignorance about EJ

Categories:

- 1) Agreement
- 2) Literacy/awareness
- 3) Low knowledge

Yes. The ability to shunt off the negative consequences of industrial society makes those who reap the benefit less likely to consider those consequences and work to address them.

- 1) Agree
- 2) Reasoning
 - a) Ability to shunt off the negative consequences of industrial society
 - b) This ability makes those who reap the benefit less likely
 1. To consider consequences
 2. To work to address them

Categories:

- 1) Agreement
- 2) Inequality of exposure/burden
- 3) Responsibility
- 4) Literacy/awareness

as much as possible about where and how it occurs; an understanding as to the multiple theories associated with the causes of unequal exposure and potential remedies,

- 1) Agree [as much as possible]
- 2) Educational goals
 - a) [inform] about where and how it occurs
 - b) Understanding of
 1. Multiple theories associated with the causes of unequal exposure
 2. Potential remedies

Categories:

- 1) Agreement
- 2) Literacy/awareness
- 3) Complexity/interconnection
- 4) Remedy

Yes. They need to understand power and privilege in society. Usually they have both and they need to know that some of their actions cause suffering in other people.

- 1) Agree
- 2) Students need to understand
 - a) Power and privilege in society
 - b) That they usually have both
 - c) That some of their actions cause suffering in others

Categories:

- 1) Agreement
- 2) Power
- 5) Privilege
- 6) Literacy/awareness

Yes, it is a critical global social issue

- 1) Agree
- 2) Critical global social issue

Categories:

- 1) Agreement
- 2) Global scope
- 3) Social issue

Na

- 1) Refusal [n/a]

Categories:

- 1) Refusal

Certainly! As citizens of the world they must or we in such departments will have failed.

- 1) Agree [enthusiasm-certainly!]
- 2) As citizens of the world students must know
 1. Duty of professors/departments
 2. To not teach is failure

Categories:

- 1) Agreement
- 2) Emotion [enthusiasm]
- 3) Citizens/citizenship
- 4) Duty of higher education

They need to understand what is happening and that our excessive living standard is what leads to this. But should we make the U.S. about equal, what we really probably did was just take our higher risk things to other poor countries that need the money (like how we deal with old computers now).

- 1) Agree
- 2) Need to understand
 - a) What is happening
 - b) Our excessive living standard is what leads to EJ
- 3) [Questioning]
 - a) Should we make the U.S. about equal?
 - b) We take our higher risk things to other poor countries that need the money
 - c) [example] how we deal with old computers

Categories:

- 1) Agreement
- 2) Literacy/awareness
- 3) Complexity/interconnection
- 4) Preferred lifestyle
- 5) Global scope

Yes. Students should understand the consequences of their lifestyle and political choices.

- 1) Agree
- 2) Students should understand
 - a) Consequences of their lifestyle
 - b) Consequences of their political choices

Categories:

- 1) Agreement
- 2) Preferred lifestyle
- 3) Political choices

Yes. Everyone should know about the forces that affect our social structure and the health of our world.

- 1) Agree
- 2) Everyone should know about
 - a) Forces that affect our social structure
 - b) Health of our world

Categories:

- 1) Agreement
- 2) Policy
- 3) Health/wellbeing

yes, they contribute indirectly through a lack of knowledge, thoughtless consumption that feeds it or directly by greed or ignorance

- 1) Agree
- 2) Students contribute indirectly to EJ through
 - a) Lack of knowledge
 - b) Thoughtless consumption that feeds it
 - c) Directly by greed or ignorance

Categories:

- 1) Agreement
- 2) Lack of knowledge

- 3) Preferred lifestyle
- 4) Greed/selfishness

Should be aware but must include analytical methods to evaluate the claims made by advocacy groups

- 1) Agree [should be aware]
- 2) [qualified]
 - a) must include analytical methods to evaluate the claims made by advocacy groups

Categories:

- 1) Agreement
- 2) Analytical methods
- 3) Claims
- 4) Advocacy groups

We bring this discussion up in Environmental Ethics in particular and in Issues in Environment and Sustainability

- 1) Agree [contextual]
- 2) Included in
 - a) Environmental Ethics (in particular)
 - b) Issues in Environment and Sustainability

Categories:

- 1) Agreement
- 2) Ethics
- 3) Sustainability

Yes, of course. Hopefully they have some morality that is directed at the conditions of others. In my state, however, such morality is often overshadowed by selfishness and jingoistic notions of freedom. Many students measure themselves by how they are doing rather than how we (their society) are doing.

- 1) Agree [of course]
- 2) Hopefully have morality directed at conditions of others
 - a) [example] in [responder's] state
 - b. Morality often overshadowed by
 1. Selfishness
 2. Jingoistic notions of freedom
 - c. Many students measure themselves
 1. By how they are doing
 2. Not how society is doing.

Categories:

- 1) Agreement
- 2) Morality
- 3) Greed/selfishness
- 4) Jingoism
- 5) Preferred lifestyle

Yes, of course, as part of their general citizenship, and call to care for their neighbors

- 1) Agree [of course]
- 2) Reasoning [as part of
 - a) [students'] general citizenship
 - b) [students'] call to care for their neighbors

Categories:

- 1) Agreement
- 2) Citizens/citizenship
- 3) Care/compassion

Yes. It's a structural problem that won't go away unless we are aware of it enough to make changes, as a society.

- 1) Agree
- 2) EJ
 - a) Structural problem
 - b) Won't go away unless we are enough aware to make changes, as a society

Categories:

- 1) Agreement
- 2) Structural problem
- 3) Literacy/awareness

Absolutely. I believe that environmental education should be a part of all university curricula, and multicultural education should be a part of all university curricula. EJ education is essentially multicultural environmental education. That doesn't mean it should be taught in all COURSES or departments, however, as suggested in one of the questions above.

- 1) Agree [enthusiasm-absolutely]
- 2) Should be a part of all university curricula
 - a) Environmental education
 - b) Multicultural education
- 3) EJ education is essentially multicultural environmental education

- 4) [disagreement] should not be taught in all
 - a) Courses
 - b) Departments
- 5) [disagreement] with question suggesting inclusion in all courses

Categories:

- 1) Agreement
- 2) Emotion [enthusiasm]
- 3) Environmental education
- 4) Multicultural education
- 5) Not all courses/departments

Yes because they need to know that all decisions made collectively have impacts on individuals. When the impacts are disparate, creating “winners and losers” it is important for students to know that society can improve the position of the “losers” without undermining the effectiveness of the policy itself. Students also need to understand that major environmental legislation like the Clean Water Act aims to protect “the weakest in the population” so we have a good precedent for including compassion in our thinking.

- 1) Agree
- 2) Need to know
 - a) Collective decisions impact individuals
 - b) Disparate impacts create winners and losers
 - c) Society can improve position of “losers” without undermining effectiveness of policy
 - d) Major environmental legislation like the Clean Water Act aims to protect the weak
 - 1. Sets precedent for including compassion in our thinking

Categories:

- 1) Agreement
- 2) Collective decisions
- 3) Inequality of exposure/burden
- 4) Inequality of benefit
- 5) Winners and losers
- 6) Care/compassion
- 7) Policy
- 8) Environmental legislation

Absolutely. Part of understanding the political and social and economic (and environmental) realities of our world.

- 1) Agree [enthusiasm-absolutely]
- 2) Part of understanding realities of our world

- a) Political
- b) Social
- c) Economic
- d) Environmental

Categories:

- 1) Agreement
- 2) Emotion [enthusiasm]
- 3) Literacy/awareness

No. It is unimportant.

- 1) Disagree
- 2) Unimportant

Categories:

- 1) Disagreement
- 2) Unimportant

Question #6-Should colleges/universities include topics of environmental justice in their coursework? Please explain your answer as fully as possible.

As the topic naturally arises in some classes, those are appropriate places to discuss the issue.

- 1) Agree
- 2) Parameters for inclusion
 - a) As topic naturally arises
 - b) Appropriate courses

Categories:

- 1) Agreement
- 2) As arises
- 3) Appropriate courses

We are a Franciscan university and try to develop attitudes of community, reverence, and stewardship into all aspects of our curricula

- 1) Agree
- 2) Associated university characteristics/goals
 - a) Franciscan
 - b) Develop/include in all curricula
 - c) Attitudes of
 - 1. Community
 - 2. Reverence
 - 3. Stewardship

Categories:

- 1) Agreement
- 2) Religious/Christian response
- 3) In all curriculum
- 4) Stewardship
- 5) Reverence
- 6) Attitude of community

Blank

- 1) Refusal [blank]

Categories:

- 1) refusal

Yes; see answer to #44 [Yes; social justice is an important part of a sustainable future]

- 1) Agree
- 2) [social justice] important part of a sustainable future

Categories:

- 1) Agreement
- 2) Social justice
- 3) Sustainable future

it is ridiculous to think that environmental justice should be taught across the university curriculum. It is an appropriate subject for some classes, but I don't see it in a seminar on Shakespeare or in a calculus class.

- 1) Agree
 - a) Parameters for inclusion
 1. Appropriate courses
- 2) Disagree
 - a) Ridiculous [strong emotion] across the university curriculum.
 - b) [examples]
 1. Seminar on Shakespeare
 2. Calculus class

Categories:

- 1) Agreement
- 2) Appropriate courses
- 3) Emotion [anger]

yes, at least in appropriate courses

- 1) Agree
- 2) Parameters for inclusion
 - a) Appropriate courses

Categories:

- 1) Agreement
- 2) Appropriate courses

Yes. There are some challenges for standard STEM courses due to long standing practices of excluding values. Many courses in social science or arts & humanities can readily include the topic.

- 1) Agree
- 2) Challenging for STEM courses
 - a) Long standing practices
 - b) Exclusion of values

Categories:

- 1) Agreement
- 2) STEM courses
- 3) Exclusion of values

Yes, and I would expand this to include environmental stewardship and environmental ethics.

- 1) Agree
- 2) Expand to include
 - a) Environmental stewardship
 - b) Environmental ethics

Categories:

- 1) Agreement
- 2) Environmental stewardship
- 3) Environmental ethics

Yes, if defined correctly!

- 1) Agree
- 2) Parameters for inclusion
 - a) Correct definition [strong emotion]

Categories:

- 1) Agreement
- 2) Emotion [anger]

3) Definition incomplete/limited/wrong

They should; but my earlier comment applies [I think that if we were going to make one environmental topic mandatory for all majors, including non-majors and professional preparation programs like accounting and nursing, it should be climate change.]

- 1) Agree
- 2) Disagree
 - a) More important mandatory course for all non-majors
 - b) Climate change

Categories:

- 1) Agreement
- 2) Climate change

Yes

- 1) Agree

Categories:

- 1) Agreement

Yes. Like discussions of race, and class, and gender, it is important to all people and should be taught at the college/university level.

- 1) Agree
- 2) Reasoning
 - a) Important to all people
 - b) Comparable to [importance] race, class, gender

Categories:

- 1) Agreement
- 2) All people
- 3) Race
- 4) Class
- 5) Gender
- 6) Teach in university

Yes, its important to realize what is going on in this world. Lots of ignorance relating to this topic.

- 1) Agree
- 2) Reasoning
 - a) Important to realize what is going on in this world
 - b) Lots of ignorance relating to this topic

Categories:

- 1) Agreement
- 2) Literacy/awareness
- 3) Low knowledge

Yes. A thorough knowledge of this issue is imperative in a liberal arts education.

- 1) Agree
- 2) Reasoning
 - a) Thorough knowledge of EJ imperative to liberal arts education

Categories:

- 1) Agreement
- 2) Imperative to liberal arts education

Yes

- 1) Agree

Categories:

- 1) Agreement

Yes. College & universities have a responsibility in educating future leaders. These people have to know who gains and who loses when they use electricity, drive a car, and all the small actions that are seemingly innocuous, but have large environmental costs that disproportionately affect others.

- 1) Agree
- 2) Reasoning
 - a) Colleges/universities have responsibility
 1. In education of future leaders
 2. To educate about small innocuous actions
 - a. With large environmental costs
 - b. That disproportionately affect others
 - c. Who gains/loses

Categories:

- 1) Agreement
- 2) Duty of higher education
- 3) Awareness of impact of own actions
- 4) Environmental cost
- 5) Inequality of distribution/burden
- 6) Winners and losers

Some courses, if relevant

- 1) Agree
- 2) Parameters for inclusion
 - a) Relevant courses

Categories:

- 1) Agreement
- 2) Relevant courses

Na

- 1) Refusal [na]

Categories:

- 1) Refusal

Yes. It should be interwoven thru out the curriculum.

- 1) Agree
- 2) Should be interwoven throughout curriculum

Categories:

- 1) Agreement
- 2) In all curriculum

It should be mentioned in classes dealing with economics and with environmental concerns. In most other classes, it would be added at the cost of information more important to that field. And since this is almost an unsolvable problem, spending too much time on it doesn't make sense.

- 1) Agree [qualified]
- 2) Should be mentioned in classes dealing with
 - a. Economics
 - b. Environmental concerns
- 3) [Should not be mentioned] in most other classes
 - a. added at cost of information more important to that field
 - b. Because almost an unsolvable problem, spending too much time on it doesn't make sense

Categories:

- 1) Agreement
- 2) Appropriate courses
- 3) Added at cost
- 4) Unsolvable problem

Yes, but it is not clear that every course is appropriate for this

- 1) Agree
- 2) Not every course appropriate

Categories:

- 1) Agreement
- 2) Appropriate courses

Yes, it should be included, particularly to non-science majors who might otherwise never know of the impacts of the technology that we take for granted daily.

- 1) Agree
- 2) Particularly non-science majors
 - a) Need to know impacts of
 1. Technology
 2. Things taken for granted

Categories:

- 1) Agreement
- 2) Non-science majors
- 3) Awareness of impact of own actions
- 4) Literacy/awareness

Yes

- 1) Agree

Categories:

- 1) Agreement

Yes, but must analyze carefully. Students must be provided the tools to make sound decisions based on fact

- 1) Agree
- 2) Parameters for inclusion
 - a) Careful analysis
 - b) Provide tools to make sound decisions
 - c) Based on fact

Categories:

- 1) Agreement
- 2) Analytical methods
- 3) Informed decision-making
- 4) Based on fact

As topically appropriate for courses- yes! It would fit into the current curriculum of most schools.

- 1) Agree [enthusiasm-yes!]
- 2) As topically appropriate for courses
- 3) Fits into current curriculum of most schools

Categories:

- 1) Agreement
- 2) Emotion [enthusiasm]
- 3) Appropriate courses
- 4) Fits most curriculum

Yes, of course. Offering a wide range of enlightening coursework should be what we're about. We should not be simply trying to train our students, but rather open their eyes and minds. It is an important topic, but not one that I think ought to be forced on anyone. Doing so would only alienate them.

- 1) Agree [enthusiasm-yes, of course]
- 2) Important topic
- 3) Offering wide range of enlightening coursework should be what [college/university] is about
- 4) Goals
 - a) Not simply training students
 - b) Opening students' eyes and minds
- 1) Qualifications
 - a) Not forced on anyone.
 - b) Not alienating students

Categories:

- 1) Agreement
- 2) Emotion [enthusiasm]
- 3) Literacy/awareness

Absolutely, in general education science courses and ethics courses

- 1) Agree [enthusiasm-absolutely]
- 2) In courses of
 - a) General education science
 - b) Ethics

Categories:

- 1) Agreement
- 2) Emotion [enthusiasm]

- 3) Appropriate courses

Probably

- 1) [limited] agreement

Categories:

- 1) Agreement
- 2) Probably

Yes. Environmental courses tend to be too much about white and privileged people or tend to separate environmental issues from social issues. The environment is a social issue, and poverty and race are environmental issues

- 1) Agree
- 2) Environmental courses
 - a) Too much about
 1. White
 2. Privileged
 - b) Separate environmental issues from social issues
- 3) Environment is social issue
- 4) Poverty and race are environmental issues

Categories:

- 1) Agreement
- 2) Social issue
- 3) Poverty
- 4) Race

Yes, especially as more universities are trying to include courses or general knowledge about sustainability. Intergenerational equity is an underpinning of sustainability and is a perfect segue to discussing intragenerational equity and social justice.

- 1) Agree
- 2) Especially with greater inclusion of
 - a) Sustainability courses
 - b) General knowledge about sustainability
- 3) Intergenerational equity
 - a) Underpins sustainability
 - b) Perfect segue to
 1. Discuss intra-generational equity
 2. Social justice

Categories:

- 1) Agreement
- 2) Sustainability
- 3) Social justice

Yes. Coursework should fully inform students about the political and social and economic (and environmental) realities of our world.

- 1) Agree
- 2) Should fully inform about realities of world
 - a) Political
 - b) Social
 - c) Economic

Categories:

- 1) Agreement
- 2) Politics
- 3) Social issue
- 4) Economics

No.

- 1) Disagree

Categories:

- 1) Disagreement

Question #7-Do you include topics of environmental justice in your teaching? Why or why not? Give examples if applicable.

I sprinkle a small amount of this topic into relevant courses, but I teach primarily basic science of geobiology, not environmental remediation or other appropriate topics where environmental justice would have a more prominent place

- 1) [inclusion of/in] issues of
 - a) Yes
 - b) Small amount
 - c) Relevant courses

Categories:

- 1) Yes
- 2) Relevant courses

Water and watershed issues--Great Lakes issues Land use issues

- 1) [inclusion of/in] issues of
 - a) Yes
 - b) Water

- c) Watershed
- d) Great Lakes
- e) Land use

Categories:

- 1) Yes
- 3) Water
- 4) Watershed
- 5) Great Lakes
- 6) Land use

Yes, although it they often spontaneous. I do have a unit on Love Canal.

- 1) [inclusion of/in] issues of
 - a) Yes
 - b) Often spontaneous
 - c) Love Canal unit

Categories:

- 1) Yes
- 2) Spontaneous
- 3) Love Canal

I happen to teach a class in environmental science. I include a unit on environmental justice and weave it throughout the semester. However, I do not even mention environmental justice when I am teaching cell and molecular processes in another course I regularly teach. Where would it fit -- before transport proteins or after protein synthesis?

- 1) [inclusion of/in] issues of
 - a) Yes
 - b) Environmental science-woven in
- 2) [inclusion of/in] issues of
 - a) No
 - a) Cell and molecular processes
 - 1. Not mentioned
 - 2. Where would it fit?
- 3) [applicability to subject taught]

Categories:

- 1) Yes
- 2) Applicable courses

talk about planning and location of public services

- 1) [inclusion of/in] issues of
 - a) Yes
 - b) planning and location of public services

Categories:

- 1) Yes
- 2) Planning
- 3) Public services

Sometimes. In my most advanced courses I may not emphasize EJ simply because

students tend to know how topics being covered related to it.

- 1) [inclusion of/in] issues of
 - a) Sometimes
 - b) May not emphasize
 1. Advanced courses
 2. When students have existing knowledge

Categories:

- 1) Sometimes

Yes, one example of nonpoint source pollution's watershed effects on streams, rivers,

lakes, and reservoirs (public and private water supply).

- 1) [inclusion of/in] issues of
 - a) Yes
 - b) Nonpoint source pollution
 1. Watershed effects
 2. Streams, rivers, lakes, and reservoirs [surface water]
 3. Water supply
 - a. Public
 - b. Private

Categories:

- 1) Yes
- 2) Nonpoint source pollution
- 3) Watershed

- 4) Surface water
- 5) Water supply

No!

- 1) [inclusion of/in] issues of
- 2) no
- 3) Emotion
 - a) Expressed by exclamation mark

Categories:

- 1) No
- 2) Emotion [emphatic]

I teach courses on religion and environment, and most of my classes incorporate env.

Justice to some degree.

- 1) [inclusion of/in] issues of
 - a) [yes]
 - b) courses on
 1. religion
 2. environment
 - c) incorporated into most classes
 - d) to some degree

Categories:

- 1) Yes
- 2) Most courses

I do. In particular I show how corporate, Chinese and Indian and Saudi land grabs are displacing and in some cases killing the rural poor in places like Ethiopia and Mali, and I show them slum life in places like Kibera, Kenya

- 1) [inclusion of/in] issues of
 - a) [yes]
 - b) Show
 1. Corporate land grabs
 - a. Chinese
 - b. Indian
 - c. Saudi
 2. Killing of rural poor
 - a. Ethiopia

- b. Mali
- 3. Slum life
- 4. Kibera, Kenya

Categories:

- 1) Yes
- 2) Corporate land grabs
- 3) Killing of rural poor
- 4) Slum life

Blank

- 1) Refusal [blank]

Categories:

- 1) Refusal

Yes. Many examples. Too many to list.

- 1) [inclusion of/in] issues of
 - a) Yes
- 2) Examples
 - a) Many
 - b) Too many to list

Categories:

- 1) Yes
- 2) Many examples

Yes. We looked @ USA's toxic air study and the toxic soil one (looking at locals on lands of closed smelters). Also talk about it in my senior seminar ethics class. And in carbon trading and landfill local talks.

- 1) [inclusion of/in] issues of
 - a) Yes
 - b) Senior seminar ethics
 - c) Local talks [about]
 - 1. Carbon trading

- 2. Landfills
- 2) Exemplar materials
 - a) USA's toxic air study
 - b) USA's toxic soils study
 - 1. Includes topics of
 - i) Local [inhabitants]
 - ii) Lands of closed smelters

Categories:

- 1) Yes
- 2) Carbon trading
- 3) Landfills
- 4) Government documents

I do. I specifically discuss the Warren County, NC historical situation

- 1) [inclusion of/in] issues of
 - a) [yes]
 - b) [specifically] History of Warren County, NC situation

Categories:

- 1) Yes
- 2) History

Yes

- 1) [inclusion of/in] issues of
 - a) Yes

Categories:

- 1) Yes

Yes, in most of my classes we touch on it: Environmental History, Environmental

Sociology, Introduction to Environmental Studies, Nature and Culture.

- 1) [inclusion of/in] issues of
 - a) Yes
 - b) Most classes
 - c) Touch on [EJ]
- 2) Examples

- a) Environmental History
- b) Environmental Sociology
- c) Introduction to Environmental Studies
- d) Nature and Culture

Categories:

- 1) Yes

Some courses, if relevant

- 1) [inclusion of/in] issues of
 - a) Yes
 - b) If relevant

Categories:

- 1) [inclusion] yes
- 2) Applicable courses

Na

- 1) Refusal [na]

Categories:

- 1) Refusal

Yes, because such topics are often the most engaging topics for project-based learning.

- 1) [inclusion of/in] issues of
 - a) Yes
 - b) Engaging topics for project-based learning

Categories:

- 1) Yes
- 2) Engaging topics

In my Environmental Science course for majors and nonmajors, as well as my

Environmental Toxicology course, I do mention this. In my Anatomy and Physiology

course, it doesn't fit, so it isn't mentioned.

- 1) [inclusion of/in] issues of

- d) Yes
 - 1. Environmental Science for majors/nonmajors
 - 2. Environmental Toxicology
- e) No
 - 2. Anatomy and Physiology
 - 3. Doesn't fit

Categories:

- 1) Yes
- 2) Appropriate courses

I include it in virtually every course I teach, even in general chemistry where I cover Climate Change and sometimes Acid Rain.

- 1) Virtually every course taught
- 2) In general chemistry cover
 - a) Climate Change
 - b) Acid rain

Categories:

- 1) Yes
- 2) All courses
- 3) Climate change
- 4) Acid rain

Sometimes, when relevant. Taught a class on the sustainability of the laptop computer that spent a semester delving into these topics. Lately am teaching more straight-chemistry classes, and haven't quite figured out how to work it into quantum mechanics yet.

- 1) [inclusion of/in] issues of
 - a) Yes-when relevant
 - 1. [example] sustainability
 - b) No-relevance issues
 - 1. General chemistry
 - 2. Quantum mechanics

Categories:

- 1) Yes
- 2) Relevant courses
- 3) Sustainability

No, not necessarily appropriate for the courses I teach

- 1) [inclusion of/in] issues of
 - a) No
 - b) Not appropriate for courses taught

Categories:

- 1) [inclusion] no
- 2) Appropriate courses

Yes especially in Environmental Ethics in particular and in Issues in Environment and Sustainability.

- 1) [inclusion of/in] issues of
 - a) Yes
 - b) Especially in
 1. Environmental Ethics
 2. Environment and Sustainability

Categories:

- 1) [inclusion] yes
- 2) [particularly] appropriate courses

Yes, when I teach environmental management I teach environmental history and part of the history of the late 20th century was the rise of awareness of environmental inequity. This, as mentioned above, is a very geographical issue that must be addressed in environmental courses.

- 1) [inclusion of/in] issues of
 - a) Yes
 - b) In environmental management course
 1. Environmental history
 2. Rise of awareness of environmental inequity (20th Century)
- 2) Geographic issue
- 3) Must be addressed in environmental courses

Categories:

- 1) [inclusion] yes
- 2) History
- 3) Geographic issue
- 4) Must be addressed

Yes, the context depends on the topic, my greater coverage is in courses related to issues, environmental health or biological conservation

- 1) [inclusion of/in] issues of
 - a) Yes
 - b) Context depends on topic

Categories:

- 1) [inclusion] yes
- 2) Contextual

Not unless it's brought up explicitly.

- 1) [inclusion of/in] issues of
 - a) Yes

Categories:

- 1) [inclusion] no
- 2) [inclusion] spontaneous

I teach a whole course on it (this is my first semester teaching it), and it is a major topic in my other courses, which are on human geography and health geography.

- 1) [inclusion of/in] issues of
 - a) Yes
 - b) Teach whole course on [EJ]
 - c) Major topic in other courses
 1. Human geography
 2. Health geography

Categories:

- 1) [inclusion] yes
- 2) Dedicated course
- 3) Major teaching topic

Yes, both in sections focused on balancing economic efficiency with equity and in sections focused on sustainability. Environmental justice is also discussed in our section on willingness to pay (WTP) since WTP is a function of ability to pay among other factors.

- 1) [inclusion of/in] issues of
 - a) Yes
 - b) In [course] sections focusing on
 1. balancing economic efficiency with equity
 2. sustainability

3. willingness to pay/ability to pay

Categories:

- 1) [inclusion] yes
- 2) Economic efficiency
- 3) Equity
- 4) Sustainability
- 5) Willingness/ability to pay

I teach a class called Environmental Justice and US policy. I think it is unique because I am in the College of Agriculture, so the framework is a little different than it would be in another department - we discuss citizen action as a motivation for change and why and how previous movements and related policies have helped (or bunged up) the ability of communities, states, and the US government to address environmental justice concerns.

- 1) [inclusion of/in] topics of
 - a) Environmental Justice and US policy
 - b) In College of Agriculture
- 2) Discuss
 - a) Citizen action as motivation for change
 - b) Why/how previous movements/related policies have helped (or bunged up) ability of communities/states/ US government to address EJ

Categories:

- 1) [inclusion] yes
- 2) Citizen action as motivation for change
- 3) History
- 4) Policy
- 5) Government ability to address EJ

I have only taught two courses in environmental law. I did include the topic.

- 1) [inclusion of/in] topics of
 - a) Yes
 - b) Environmental law

Categories:

- 1) [inclusion] yes

No

- 1) [inclusion of/in] topics of
 - a) no

Categories:

- 1) [inclusion] no

Question #8-What GENERAL types of materials, if any, do you use to teach environmental justice? How are they used?

breaking news items primarily

- 1) [resources used/preferred]
 - a) Breaking news items

Categories:

- 1) Breaking news items

I have a repertoire of short articles to tailor to various topics

- 1) [resources used/preferred]
 - a) Short articles
 - 1. Tailored to various topics

Categories:

- 1) Short articles

I don't understand this question

- 1) Refusal [question not understood]

Categories:

- 1) Refusal

I use case studies, news articles, and the textbook.

- 1) [resources used/preferred]
 - a) Case studies
 - b) News articles
 - c) Textbook

Categories:

- 1) Case studies
- 2) News articles
- 3) Textbook

GIS

- 1) [resources used/preferred]
 - a) GIS

Categories:

- 1) GIS

I have not taught a lower division course in 10 years. I do use more advanced discussions of EJ in some courses. I'll be giving some more thought to the approach for general education on EJ in the future.

- 1) [resources used/preferred]
 - a) more advanced discussions in some [upper level] courses
- 2) Other comments
 - b) Does not [currently] teach lower division courses
 - c) Will consider general education approach for future

Categories:

- 1) Discussion

Case studies, current events from print media, especially regarding legislative and judicial action.

- 1) [resources used/preferred]
 - a) Case studies
 - b) Current events (from print media)
 1. legislative action
 2. judicial action

Categories:

- 1) Case studies
- 2) Current events
- 3) Legislative action
- 4) Judicial action

None!

- 1) [resources used/preferred]
 - a) None [emotion None!]

Categories:

- 1) None
- 2) Emotion [emphatic]

I use articles and materials from the web, especially for case studies.

- 1) [resources used/preferred]
 - a) Materials from the web
 1. Especially case studies

Categories:

- 1) Web sources
- 2) Case studies

I use movies and Socratic questions, news articles and books

- 1) [resources used/preferred]
 - a) Movies
 - b) Socratic questions
 - c) News articles
 - d) Books

Categories:

- 1) Videos/films
- 2) Socratic questions
- 3) News articles
- 4) Books

Blank

- 1) Refusal [blank]

Categories:

- 1) Refusal

Books, articles, websites, films, more.

- 1) [resources used/preferred]
 - a) Books
 - b) Articles
 - c) Websites
 - d) Films
 - e) More

Categories:

- 1) Books
- 2) Articles
- 3) Websites
- 4) Videos/Films
- 5) Other

case studies, reflection papers, and class discussions.

- 1) [resources used/preferred]
 - a) Case studies
 - b) Reflection papers

c) Class discussions

Categories:

- 1) Case studies
- 2) Reflection papers
- 3) Discussion

I do not use materials. Mine is a traditional lecture class

- 1) [resources used/preferred]
 - a) None
 - b) Traditional lecture class

Categories:

- 1) None

Case studies, videos/films

- 1) [resources used/preferred]
 - a) Case studies
 - b) Videos/films

Categories:

- 1) Case studies
- 2) Videos/Films

Essays, you tube videos, news reports.

- 1) [resources used/preferred]
 - a) Essays
 - b) You Tube videos
 - c) News reports

Categories:

- 1) Essays
- 2) Videos/Films
- 3) News reports

Discussion, case study

- 1) [resources used/preferred]
 - a) Discussion
 - b) Case study

Categories:

- 1) Discussion
- 2) Case studies

Na

- 1) Refusal [n/a]

Categories:

- 1) Refusal

A few selected readings, but most it based on small groups of students choosing a special topic within a broad assignment for designing, executing and reporting to the larger group.

- 1) [resources used/preferred]
 - a) [few] selected readings
 - b) [mostly] small group work
 1. Students choose special topic
 2. Assigned to
 - A. Design
 - B. Execute
 - C. Report to larger group

Categories:

- 1) Selected readings
- 2) Small group research/report

overheads or Powerpoint slides

- 1) [resources used/preferred]
 - a) Overheads
 - b) PowerPoint slides

Categories:

- 1) Overheads
- 2) PowerPoints

Simulation games/case studies. These involve students playing roles in critical decisions on pollution. Each game includes issues of environmental philosophy and environmental justice. <https://sites.google.com/site/reactingscience/home>

- 1) [resources used/preferred]

- a) Simulation games/case studies
 - 1. Role play
 - 2. Critical decisions on pollution
 - 3. Include issues of
 - a. Environmental philosophy
 - b. Environmental justice

Categories:

- 1) Simulation games
- 2) Case studies

Media coverage to act as a hook (This American Life, podcasts from ABC radio national, TED talks), articles and book chapters from environmental science/philosophy texts, reflective essays from students case studies, participants, stats

- 1) [resources used/preferred]
 - a) Media coverage
 - 1. Acts as hook
 - 2. [examples]
 - a. This American Life
 - b. Podcasts from ABC Radio National
 - c. TED Talks
 - b) Articles
 - c) Book chapters (from environmental science/philosophy texts)
 - d) [writing] reflective essays
 - e) Case studies
 - f) Participants
 - g) Stats

Categories:

- 1) Media coverage
- 2) This American Life
- 3) Podcasts from ABC Radio National
- 4) TED Talks
- 5) Articles
- 6) Book chapters
- 7) Reflective essays
- 8) Case studies
- 9) Participants
- 10) Stats

N/A

- 1) Refusal [n/a]

Categories:

- 1) Refusal

videos, research papers, peer visits to classroom, site visits as possible.

- 1) [resources used/preferred]
 - a) Videos
 - b) research papers
 - c) peer visits to classroom
 - d) site visits

Categories:

- 1) Research papers
- 2) Guest speakers
- 3) Field trips

I vary the materials I employ. My textbooks change frequently and I supplement them with suitable materials including my own lectures, occasional readings and clips from documentaries or television programming.

- 1) [resources used/preferred]
 - a) Textbooks (varied frequently)
 - b) Supplemental materials
 1. For textbooks
 2. From own lectures
 - c) Readings (occasional)
 - d) Clips from documentaries (occasional)

Categories:

- 1) Textbooks
- 2) Textbook supplemental materials
- 3) Readings
- 4) Videos/Films

I like films with real cases, real people at risk, we use readings, and field trips

- 1) [resources used/preferred]
 - a) Films with
 1. Real cases
 2. Real people at risk
 - b) Readings
 - c) Field trips

Categories:

- 1) Videos/films
- 2) Readings
- 3) Field trips

Case studies, books, book chapters, discussions of real-world EJ scenarios, guest speakers, community-based projects.

- 1) [resources used/preferred]
 - a) Case studies
 - b) Books
 - c) Book chapters
 - d) Discussions of real-world EJ scenarios
 - e) Guest speakers
 - f) Community-based projects

Categories:

- 1) Case studies
- 2) Books
- 3) Book chapters
- 4) Discussion
- 5) Guest speakers
- 6) Community-based projects

Moderated online discussions in which students must document their assertions with credible sources and respond to classmates' postings. Peer reviewed journal articles, university websites, and some environmental organizations' websites (eg Resources for the Future) are among the credible sources.

- 1) [resources used/preferred]
 - a) Moderated online discussions
 - b) Peer reviewed journal articles
 - c) University websites
 - d) [credible] environmental organizations' websites
 1. [example] Resources for the Future

Categories:

- 1) Moderated online discussions
- 2) Peer reviewed journal articles
- 3) University websites
- 4) Credible sources
- 5) Environmental organizations' websites
- 6) Resources for the Future

Lots of primary literature, some popular news sources and video clips, I have modified case studies published online by students at Bates College and University of Michigan. I really like “From the Ground Up” “Environmental Justice in America”. Students were mixed on “Justice and Natural Resources” and a book of law-related scholarship (Rechstaffen and Gauna are the authors). Last year, we evaluated the strategic plans for environmental justice while they were open for public comment. That was a perfect coincidence and worked really well as a way of assessing learning and synthesis through the course.

- 1) [resources used/preferred]
 - a) Primary literature
 - b) Popular news sources
 - c) Video clips
 - d) Case studies (online)
 - e) Like
 1. “From the Ground Up”
 2. “Environmental Justice in America”
 - f) “Justice and Natural Resources”
 - g) Book of law-related scholarship (Rechstaffen and Gauna)
 - h) [United States] strategic plans for environmental justice [during comment period]
 1. Perfect coincidence
 2. Worked well as
 - a. way of assessing learning
 - b. way of assessing synthesis

Categories:

- 1) Primary literature
- 2) Popular news sources
- 3) Videos/films
- 4) Case studies
- 5) Law books
- 6) Government documents

I used references in the textbooks used for the courses, plus my own descriptions of my experience as an environmental lobbyist.

- 1) [resources used/preferred]
 - a) Textbooks
 - b) References in textbooks used
 - c) Own experience

Categories:

- 1) Textbooks
- 2) Textbook supplemental materials

- 3) Own experience

Question #9-What do you see as your role in the classroom concerning environmental justice?

A minor commentator where the issue overlaps with my curriculum topics.

- 1) [Role/duty]
 - a) Minor commentator
 - b) At point of EJ/course curriculum intersect

Categories:

- 1) Commentator

Leading by example--walking the proverbial walk

- 1) [Role/duty]
 - a) Leading by example
 - b) Walking the walk

Categories:

- 1) Leading by example

Social injustice is a social harm that affects everybody, although clearly some more than others. I try to get my science students to understand that we (scientists) need to ask more than if we can but if we should. That is not a question that science can answer, but it is a question that humans must consider. Environmental Justice is one frame in which questions like these can be answered.

- 1) Social injustice
 - a) Social harm
 - b) Affects everybody
 - c) Affects some more than others
- 2) [Role/duty]
 - a) Foster student understanding
 1. Role of science
 2. Asking not can we, but should we [ethics]
 - a. Science cannot answer [ethical questions]
 - b. Humans must ask
 - c. EJ provides framing for

Categories:

- 1) Social justice
- 2) All people affected
- 3) Inequality of exposure/burden
- 4) Role of science
- 5) Foster student understanding
- 6) EJ as framework for ethical questions

I hope to facilitate students in critical thinking skills, exposing them to new ideas

- 1) [Role/duty]
 - a) Facilitate critical thinking
 - b) Expose to new ideas

Categories:

- 1) Facilitate critical thinking
- 2) Expose to new ideas

developing planning skills

- 1) [Role/duty]
 - a) Developing planning skills [in students?]

Categories:

- 1) Developing planning skills [in students?]

EJ is an important element in the content of what I teach. My role is to help students understand the concept and to appreciate different ways of thinking about it, then to explore how it can impact their conduct. I have colleagues who teach entire courses devoted to the topic, and I mostly see my personal role as connecting what they do to other concepts and topics in environmental studies.

- 1) [Role/duty]
 - a) Help students
 1. Understand concept [EJ]
 2. Appreciate different ways of thinking about [EJ]
 3. Explore how it can impact their conduct
 - b) Connecting what colleagues teach [courses dedicated to EJ] to environmental studies [what she/he teaches]
- 2) EJ is important element in her/his curriculum

Categories:

- 1) Help
- 2) Explore
- 3) Connect course curriculum to greater curriculum of university

- 4) Concept of EJ
- 5) Different ways of thinking about [EJ]
- 6) Awareness of impact of own actions

To raise awareness and provide solutions for prevention and remediation of pollution impacts regarding forest management, timber harvesting, and wood manufacturing.

- 1) [Role/duty]
 - a) Raise awareness
 - b) Provide solutions for
 1. Prevention of pollution impacts
 2. Remediation of pollution impacts
 3. Related to
 - a. forest management
 - b. timber harvesting
 - c. wood manufacturing

Categories:

- 1) Raise awareness
- 2) Provide solutions
- 3) Prevention
- 4) Remediation
- 5) Forest management

Making sure that it is based on data driven science instead of liberal agendas.

- 1) [Role/duty]
 - a) Make sure that
 1. [EJ] based on data driven science
 2. [EJ] not based on liberal agendas

Categories:

- 1) Guardianship of accurate information
- 2) Science-based
- 3) Liberal agendas

I expose my students to the concept, and I would like them to understand that our consumption behavior has consequences.

- 1) [Role/duty]
 - a) Expose students to concept [EJ]
 - b) Create understanding of connection between consumption and [environmental injustice]

Categories:

- 1) Expose
- 2) Create
- 3) Concept of EJ
- 4) Awareness of impact of own actions

I'm a facilitator. My job is to get students to think for themselves.

- 1) [Role/duty]
 - a) Facilitator
 - b) Get students to think for themselves

Categories:

- 1) Facilitator
- 2) Students thinking for selves

Blank

- 1) Refusal [blank]

Categories:

- 1) refusal

as a co-learner and guide

- 1) [Role/duty]
 - a) Co-learner
 - b) Guide

Categories:

- 1) Co-learner
- 2) Guide

Alerting the students to this problem

- 1) [Role/duty]
 - a) Alerting students to problem

Categories:

- 1) Alert students to EJ

To make students aware of the issue and promote discussion on solutions to it.

- 1) [Role/duty]

- a) Make students aware [EJ]
- a) Promote discussion about solutions

Categories:

- 1) Alert students to EJ
- 2) Promote discussion
- 3) Solutions

facilitator of the learning

- 1) [Role/duty]
 - a) facilitator of learning

Categories:

- 1) Facilitator

To educate students. I don't want to shame them or alienate them, but I want to shine a light on the fact that their privileges directly correlate to someone else's suffering, especially in regards to consumerism and energy consumption

- 1) [Role/duty]
 - a) Educate students
 - b) Not
 - 1. Shame
 - 2. Alienate
 - c) Shine light on
 - 1. [student] privilege
 - 2. Correlation to others' suffering
 - a. Consumerism
 - b. Energy consumption

Categories:

- 1) Educate students
- 2) Avoid shame/alienation
- 3) Shine light on subject
- 4) Awareness of impact of own actions
- 5) Care/compassion

Instructor

- 1) [Role/duty]
 - a) Instructor

Categories:

- 1) Instructor

na

- 1) refusal [n/a]

Categories:

- 1) refusal

More as the conductor of several groups asking “Have you considered this?” or “Have you seen what XX has to say about that conclusion?”

- 1) [Role/duty]
 - a) Group conductor
 - b) Asking probing questions

Categories:

- 1) Group conductor
- 2) Ask questions

Explaining what it and the difficulties in addressing it.

- 1) [Role/duty]
 - a) Explaining
 1. [EJ]
 2. Difficulties in addressing [EJ]

Categories:

- 1) Explain
- 2) Concept of EJ
- 3) Complexity/interconnection

Help students see their role in the world and the assumptions they bring to their choices. Also, help them understand the consequences of these choices for others.

- 1) [Role/duty]
 - a) Help students see/understand
 1. Role in world
 2. Assumptions bring to own choices
 3. Consequences of own choices

Categories:

- 1) Help students see
- 2) Help students understand
- 3) Role in world

- 4) Assumptions
- 5) Awareness of impact of own actions

Facilitator. I need to present an organized collection of questions and encourage students to engage with them. I have taught two classes generally in this topic area, and have made them almost entirely discussion-based.

- 1) [Role/duty]
 - a) Facilitator
 - b) Present questions
 - c) Encourage student engagement with questions
 - d) Presentation of materials through discussion

Categories:

- 1) Facilitator
- 2) Ask questions
- 3) Encourage
- 4) Presenter
- 5) Facilitate discussion

advocating action

- 1) [Role/duty]
 - a) Advocating action

Categories:

- 1) Advocating action

Open discussion with both sides evaluated

- 1) [Role/duty]
 - a) [facilitate] open discussion
 - b) [facilitate] evaluation of both sides

Categories:

- 1) Facilitate discussion
- 2) Facilitate critical thinking

facilitator, re-vealer, directing research to fix problems

- 1) [Role/duty]
 - a) Facilitator

- b) Revealer
- c) Directing research to fix problems

Categories:

- 1) Facilitator
- 2) Revealer
- 3) Directing research to fix problems

My role is to open the notion of environmental justice to critical thinking and geographic methods to understand the patterns that may or may not be unjust, may or may not be racist, may or may not be inequitable. My main focus is teaching the geography of environmental management, so I am interested not in forming their ethics, but getting students to think critically about the tools or perspectives that we use to consider social, political, cultural and environmental problems.

- 1) [Role/duty]
 - a) Open EJ to
 - 1. Critical thinking
 - 2. Geographic methods
 - b) [help students] understand patterns that are not
 - 1. Unjust
 - 2. Racist
 - 3. Inequitable
- 2) Main focus [of teaching]
 - a) geography of environmental management
 - b) not ethics
 - c) critical thinking about tools/perspectives for problem solving
 - 1. social
 - 2. political
 - 3. cultural
 - 4. environmental

Categories:

- 1) Critical thinking
- 2) Geographic methods
- 3) Justice
- 4) Racism
- 5) Inequality of exposure/burden
- 6) Ethics

Awareness and linking the material to religious ethics and values

- 1) [Role/duty]
 - a) [creating] awareness
 - b) Linking material [taught] to
 1. Religious ethics
 2. Values

Categories:

- 1) Awareness
- 2) Linking curriculum to religious ethics/values

Facilitator

- 1) [Role/duty]
 - a) Facilitator

Categories:

- 1) Facilitator

I aim to bring the stories of EJ communities to students in a variety of disciplines. I want students to understand the underlying drivers of environmental injustice and how privilege perpetuates environmental injustice. I want students to gain empathy with communities and see them not merely as victims but as potential agents in demanding justice for themselves.

- 1) [Role/duty]
 - a) Tell stories of EJ communities
 - b) Present to variety of disciplines
- 2) She/he wants students to
 - a) understand underlying drivers of EJ
 - b) understand how privilege perpetuates EJ
 - c) gain empathy for communities
 - d) not see communities as victims
 - e) see communities as agents demanding justice for selves

Categories:

- 1) Tell stories of EJ communities
- 2) Underlying drivers
- 3) Privilege
- 4) Care/compassion
- 5) Communities as victims
- 6) Communities as agents demanding justice for selves

Facilitator of the discussions but also a referee who ensures that people do not make ignorant statements that go unchallenged. I try to pull students away from their comfort zones and from the “misinforming media sources” they watch and read. I try to walk a fine line of not telling them what to think but rather how to evaluate information, data, and biases.

- 1) [Role/duty]
 - a) Facilitator of discussion
 - b) Referee
 1. ignorant statements
 2. unchallenged [statements]
 - c) pull students from comfort zones
 - d) [make students aware of] misinformation in media
 - e) Not tell what to do
 - f) [tools to] evaluate [what is being said]

Categories:

- 1) Facilitator
- 2) Discussion
- 3) Referee
- 4) Misinformation
- 5) Awareness of impact of own actions
- 6) Critical thinking

To get students to think about the intended and unintended consequences of policy and the role that history plays in constraining opportunity. To give them opportunities to apply what they learned to affect positive change, to challenge assumptions built in to their world view based on their personal experiences, to give them opportunities to express creative problem solving and develop skills (like writing public comments, working in groups) that will allow them to use knowledge in ways that support their interests in sustainability and justice

- 1) [Role/duty]
 - a) Get students to think
 1. Intended/unintended consequences of policy
 2. Role of history in constraining opportunity
 - b) Give opportunity to
 1. Apply learning
 2. Effect positive change
 3. Challenge assumptions built into worldviews through personal experience
 4. Express creative problem solving

5. Develop skills to support interests in sustainability and justice
 - a. Writing public comments
 - b. Working in groups
- c) Create awareness/understanding to change current realities

Categories:

- 1) Facilitate thinking
- 2) Intentional/unintentional
- 3) Policy
- 4) History
- 5) Application of learning
- 6) Challenge
- 7) Assumptions
- 8) Positive change
- 9) Worldview
- 10) Problem solving
- 11) Advocating action

Making students aware, and fostering an understanding that changes in current realities are required

- 1) [role/duty]
 - a) Making students aware
 - b) Fostering understanding
 1. Changes in current realities needed

Categories:

- 1) Creating awareness
- 2) Fostering understanding
- 3) Need for change

D-3. Qualitative Data: Thematic Frequency Tables

Question #1-In your own words, please define the term environmental justice. Please be as specific as possible.

CATEGORY	FREQUENCY
Access	X
Age	X
Awareness	X
Black	X
Class	XXXXXXXXXX
Climate change	X
Correct past injustices	X
Creed	X
Definition incomplete/limited	XX
Decision-making	X
Disadvantaged	XX
Disagreement	XXXXX
EJ as a goal/ ideal	XX
EJ not limited to USA	XX
Emotion [anger]	XXX
Environmental equity	X
Environmental hazard	X
Environmental racism	X
Equalizing risk	X
Ethnicity	XX
Food rights	X
Gender	XXX
Group	XX
Harm	X
Health/wellbeing	XX
Hispanic	X
Improving environment for future generations	X
Inequality of exposure/burden	XXXXXXXXXXXXXXXXXXXX
Inequality of benefits	XXXXXXXXXX
Justice [broad category]	X
Location	XXXXX
Marginalized	X
Native American/1 st Nation	X
Non-human environment	X
Political movement	X

Political power	xx
Protection	x
Race	xxxxxxx
Refugees	x
Refusal	xxx
Religion	xx
Respect [cultural]	x
Respect [for Earth]	x
Responsibility [for Earth]	x
Risk	xx
Rural	x
Rural/poor/white	x
Safety	x
Self-determination	x
Unequal distribution	xx
Unborn	x
Urban	x

Question #2-What do you know about environmental justice?

CATEGORY	FREQUENCY
Advocacy groups	x
Agriculture	x
Black	xx
Class	xxxxx
Climate change	xx
Communities of color	x
Community-based participatory research	x
Critical race theory	x
Definition incomplete/limited	x
Disagreement	xx
Ecofeminism	x
Economic opportunity	x
Economics	x
Economy	x
EJ disregarded	x
EJ as a goal/ ideal	x
Emotion [accusation]	x
Emotion [anger]	x

Emotion [political outlook/belief]	x
Environmental law	x
Everyone bears blame	x
Exposure to natural hazards	x
Failed to answer question	xxxx
Feminist theory	x
Food justice	x
Harm	x
Health/wellbeing	x
High knowledge	xx
History	xxx
Impact	x
Improving environment for future generations	x
Industry/corporations	xx
Inequality of benefits	xx
Inequality of exposure/burden	xxxx
Intentional/unintentional	x
Latino	x
Location	xx
Low knowledge	x
Moderate knowledge	xxxx
Political movement	x
Poor environmental record	x
Profound consequences	x
Race	xxx
Racism	x
Refusal	xxxxxx
Religious/Christian response	xx
Residential	x
Response models	x
Robert Bullard	x
Robust economy	x
Rural	x
Rural/poor/white	x
Social injustice	x
Social/political proxy	x
Urban	xx
Urban low income whites	x
USA	x
White males	x

**Question #3-What populations are affected by environmental justice?
In what ways? Give as much detail as possible.**

CATEGORY	FREQUENCY
Agriculture	XX
Air pollution	XX
All persons affected	XXXXXXXXXX
Black	XXX
Children	X
Class	XXXXXXXXXXXXXX
Climate change	XXX
Colonialism	X
Color	X
Community	X
Creed	X
Decision-making	X
Disagreement	XXX
Economics	X
Emotion [agreement]	X
Equity	X
Ethnicity	X
Export of toxins	X
Gender	XXXXX
Global south	X
Group	X
Health/wellbeing	XXXX
Hispanics	XXX
History	X
Housing inequities	X
Industry/corporations	X
Inequality of exposure/burden	XXXXXX
Intentional/unintentional	X
Inequality of benefit	X
Lack of knowledge	XXX
Lead poisoning Lead poisoning	X
Location	XXXX
Loss of talent	X
Mainstream environmentalists	X
Many	X
Marginalized	X

Middle class whites	x
Minorities	xx
Mis-representation/undervaluing of experience/values	x
Native Americans/1 st Nations	xx
Oppressed populations	x
Paper mills	x
People of color	x
Pesticides	x
Political power	xxxxx
Political turmoil	x
Poor rural whites	xx
Poverty	xxxx
Profession	x
Race	xxxxxxxxx
Refineries	x
Refusal	xxxx
Religion	x
Resource extraction	x
Rural	xxxx
Urban	xxxx
Water issues	x
Water pollution	x
Weak	x

Question #4-*In general, what do the students which you instruct know about environmental justice? Give examples if applicable.*

CATEGORY	FREQUENCY
All persons affected	x
Apathy	x
Assumptions	x
Blacks	xx
Class	xx
Climate change	x
Complexity/interconnection	xxx
Creed	x
Critical thinking skills	x
Definition inaccurate	x
Disagreement	x

EJ as a goal/ ideal	x
Economics	xx
Equalizing of risks	x
Failed to answer question	xxxxx
Failure/inability to see solutions	x
Fracking	x
Lack of interest/concern	x
Low knowledge	x
Have knowledge of related information	x
High interest	xxx
High knowledge	xx
Hispanics	x
Inequality of benefit	xxx
Inequality of exposure/burden	xxxxx
Intentional/unintentional	xx
Knowledge/understanding improvement	x
Lived knowledge	xx
Low interest	x
Low knowledge	xxxxxxxxxxxxxxxxxxx
NIMBY	x
Middle class	x
Narrow/stereotypic thinking	x
Neighborhood	x
Policy	xxx
Poverty	xx
Preferred lifestyle	x
Race	xxx
Refusal	xx
Religious ties	x
Responder disinterest	x
Risk analysis	x
Science	x
Stereotypical knowledge	x
Unsure about knowledge	xx
Wealth	x

Question #5-Should students know about environmental justice? Why or why not?

CATEGORY	FREQUENCY
Advocacy groups	x
Agreement	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
All people affected	xx
Analytical methods	x
Awareness of impact of own actions	x
Care/compassion	xx
Citizens/citizenship	xxxx
Claims	x
Climate change	x
Collective decisions	x
Complexity/interconnection	xx
Definition incomplete/limited/wrong	x
Disagreement	x
Duty of higher education	x
Emotion [anger]	x
Emotion [enthusiasm]	xxx
Environmental education	x
Environmental legislation	x
Ethics	xx
Fundamental freedoms/liberties	x
Global scope	xx
Greed/selfishness	xx
Health/wellbeing	x
Inequality of benefit	x
Inequality of exposure/burden	xx
Informed decision-making	x
Jingoism	x
Lack of knowledge	x
Literacy/awareness	xxxxxxxx
Low knowledge	x
Morality	x
Multicultural education	x
Not all courses/departments	x
Preferred lifestyle	xxxx
Policy	xxxx
Political choices	x
Power	x

Privilege	x
Refusal	x
Remedy	x
Responsibility	xx
Sensitivity	x
Social issue	x
Social justice	xx
Structural problem	x
Sustainability	x
Sustainable future	x
Unimportant	x
Winners and losers	x
Worldview	x

Question #6-Should colleges/universities include topics of environmental justice in their coursework? Please explain your answer as fully as possible.

CATEGORY	FREQUENCY
Added at cost	x
Agreement	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
All people	x
Analytical methods	x
Appropriate courses	xxxxxxx
As arises	x
Attitude of community	x
Awareness of impact of own actions	xx
Based on fact	x
Class	x
Climate change	x
Definition incomplete/limited/wrong	x
Disagreement	x
Duty of higher education	x
Economics	x
Emotion [anger]	xx
Emotion [enthusiasm]	xxx
Environmental cost	x
Environmental ethics	x
Environmental stewardship	x

Exclusion of values	x
Fits most curriculum	x
Gender	x
Imperative to liberal arts education	x
In all curriculum	xx
Inequality of distribution/burden	x
Informed decision-making	x
Literacy/awareness	xxx
Low knowledge	x
Non-science majors	x
Politics	x
Poverty	x
Probably	x
Race	xx
Refusal	xx
Relevant courses	x
Religious/Christian response	x
Reverence	x
Stewardship	x
Social issue	xx
Social justice	xx
STEM courses	x
Sustainability	x
Sustainable future	x
Teach in university	x
Unsolvable problem	x
Winners and losers	x

Question #7-Do you include topics of environmental justice in your teaching? Why or why not? Give examples if applicable.

CATEGORY	FREQUENCY
Acid rain	x
All courses	x
Applicable courses	xxxxxx
Carbon trading	x
Citizen action as motivation for change	x
Climate change	x
Contextual	x
Corporate land grabs	x

Dedicated course	x
Economic efficiency	x
Emotion [emphatic]	x
Engaging topics	x
Equity	x
Geographic issue	x
Government ability to address EJ	x
Government documents	x
Great Lakes	x
History	xxx
[inclusion] no	xxxx
[inclusion] spontaneous	x
[inclusion] yes	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Killing of rural poor	x
Landfills	x
Land use	x
Love Canal	x
Major teaching topic	x
Many examples	x
Most courses	x
Must be addressed	x
Nonpoint source pollution	x
Planning	x
Policy	x
Public services	x
Refusal	x
Slum life	x
Sometimes	x
Spontaneous	x
Surface water	x
Sustainability	xx
Water	x
Watershed	xx
Water supply	x
Willingness/ability to pay	x

Question #8-What GENERAL types of materials, if any, do you use to teach environmental justice? How are they used?

CATEGORY	FREQUENCY
Articles	XX
Book chapters	XX
Books	XXX
Breaking news items	X
Case studies	XXXXXXXXXX
Community-based projects	X
Credible sources	X
Current events	X
Discussion	XXXX
Emotion [emphatic]	X
Environmental organizations' websites	X
Essays	X
Field trips	XX
GIS	X
Government documents	X
Guest speakers	XX
Judicial action	X
Law books	X
Legislative action	X
Media coverage	X
Moderated online discussions	X
News articles	XX
News reports	X
None	XX
Other	X
Overheads	X
Own experience	X
Participants	X
Peer reviewed journal articles	X
Podcasts from ABC Radio National	X
Popular news sources	X
PowerPoints	X
Primary literature	X
Readings	XX
Reflective essays	X
Reflection papers	X
Refusal	XXXX

Research papers	x
Resources for the Future	x
Selected readings	x
Short articles	x
Simulation games	x
Small group research/report	x
Socratic questions	x
Stats	x
TED Talks	x
This American Life	x
Textbooks	xxx
Textbook supplemental materials	xx
University websites Videos/Films	x
Videos/Films	xxxxxx
Websites	x
Web sources	x

Question #9-What do you see as your role in the classroom concerning environmental justice?

CATEGORY	FREQUENCY
Advocating action	x
Alert students to EJ	xx
All people affected	x
Application of learning	x
Ask questions	xx
Assumptions	xx
Avoid shame/alienation	x
Awareness	x
Awareness of impact of own actions	xxxxx
Care/compassion	xx
Challenge	x
Co-learner	x
Commentator	x
Communities as agents demanding justice for selves	x
Complexity/interconnection	x
Communities as victims	x
Concept of EJ	xxx

Connect course curriculum to greater curriculum of university	x
Create	x
Creating awareness	x
Critical thinking	xx
Developing planning skills [in students?]	x
Different ways of thinking about [EJ]	x
Directing research to fix problems	x
Discussion	x
Educate students	x
EJ as framework for ethical questions	x
Encourage	x
Ethics	x
Explain	x
Explore	x
Expose	x
Expose to new ideas	x
Facilitate critical thinking	xx
Facilitate discussion	xx
Facilitate thinking	x
Facilitator	xxxxxx
Forest management	x
Foster student understanding	xx
Geographic methods	x
Group conductor	x
Guardianship of accurate information	x
Guide	x
Help	x
Help students see	x
Help students understand	x
History	x
Inequality of exposure/burden	xx
Instructor	x
Intentional/unintentional	x
Justice	x
Leading by example	x
Liberal agendas	x
Linking curriculum to religious ethics/values	x
Misinformation	x
Need for change	x

Policy	x
Positive change	x
Presenter	x
Prevention	x
Privilege	x
Problem solving	x
Promote discussion	x
Provide solutions	x
Racism	x
Raise awareness	x
Referee	x
Refusal	xx
Remediation	x
Revealer	x
Role in world	x
Role of science	x
Science-based	x
Shine light on subject	x
Social justice	x
Solutions	x
Students thinking for selves	x
Tell stories of EJ communities	x
Underlying drivers	x
Worldview	x

D-4. Qualitative Questionnaire Demographics

In what department(s) do you teach? (mark all that apply)

- Environmental Science/environmental studies (77.8%)
- Biology (18.5%)
- Earth science (11.1%)
- Geology (14.8%)
- Geography (11.1%)
- Ethics (7.4%)
- I do not wish to answer this question (0.0%)

Are you a

- Female (43.3%)
- Male (53.3%)
- Other (0.0%)

Please provide the following information

State in which you teach	Zip Code for the city/town in which you teach
California	94702, 95064, 94542
Colorado	80217
Connecticut	06106
Georgia	declined
Illinois	60532
Indiana	46135
Iowa	declined
Maine	04921
Maryland	21532
Massachusetts	02115
Michigan	49931, 48822
Missouri	65101
New Mexico	87801, 87108
New York	14623, 12983
North Carolina	28403, 28403
Ohio	43560
Oregon	97403, 97601, 97116
Pennsylvania	17055
Rhode Island	02915
Tennessee	declined
Texas	78676

Check the ONE option which best describes your race/ethnicity

- Native American/Native Alaskan (0.0%)
- Native Hawaiian/other Pacific Islander (0.0%)
- Black/African American (0.0%)
- Hispanic/Latino(a) (0.0%)
- Non-Hispanic White (96.7%)
- Multiple Races/ethnicities (0.0%)
- I do not wish to answer this question (3.3%)

What is your age?

Qualitative-Age

0	
1	
2	
3	0, 0, 4, 7, 9
4	3, 3, 5, 6, 7
5	0, 0, 1, 1, 2, 3, 4, 5, 5, 9
6	0, 1, 1, 3, 4, 7, 9
7	4
8	0

What is your total household income?

- Less than \$10,000 (0.0%)
- \$10,000-\$19,999 (0.0%)
- \$20,000-\$29,999 (0.0%)
- \$30,000-\$39,999 (0.0%)
- \$40,000-\$49,999 (3.3%)
- \$50,000-\$59,999 (3.3%)
- \$69,000-\$69,999 (3.3%)
- \$70,000-\$79,999 (13.3%)
- \$80,000-\$89,999 (10%)
- \$90,000-\$99,999 (6.7%)
- \$100,000-\$149,999 (3.3%)
- **\$150 or more (40%)**
- I do not wish to answer this question (6.7%)

What is your marital status?

- Never married (3.3%)
- **Married (83.3%)**
- Divorced (6.7%)
- Separated (0.0%)
- Widowed (0.0%)
- Non-marital relationship (0.0%)
- Same-sex relationship (0.0%)
- I do not wish to answer this question (6.6%)

What is your political orientation?

- Very conservative (0.0%)
- Conservative (7.1%)

- Middle of the road (25.0%)
- **Liberal (35.7%)**
- Very liberal (25.0%)
- Apolitical (3.6%)
- I do not wish to answer this question (3.6%)
- Other (write in)
 - Independent green-Fabian
 - I don't think I fit in any of these, but am politically active
 - Very progressive/leftist

What is your religious affiliation?

- Christian/Catholic (10.0%)
- **Christian/other (33.3%)**
- Islamic (0.0%)
- Jewish (3.3%)
- Hindu (0.0%)
- Agnostic (10.0%)
- Atheist (13.3%)
- None (26.7%)
- I do not wish to answer this question (3.3%)
- Other (write in)
 - Quaker
 - Buddhist

What kind of area did you grow up in? (mark all that apply)

- Rural/country (26.7%)
- Small town (population less than 2000) (6.7%)
- Town (population greater than 2000) (30.0%)
- **Suburban (33.3%)**
- Urban/large city (20.0%)
- I do not wish to answer this question (0.0%)

What kind of area do you presently live in?

- Rural/country (10.0%)
- Small town (population less than 2000) (3.3%)
- **Town (population greater than 2000) (33.3%)**
- Suburban (26.7%)
- Urban/large city (26.7%)
- I do not wish to answer this question (0.0%)

What kind of area do you presently teach in?

- Rural/country (6.7%)
- Small town (population less than 2000) (0.0%)

- **Town (population greater than 2000) (43.3%)**
- Suburban (20.0%)
- Urban/large city (30.0%)
- I do not wish to answer this question (0.0%)

What kind(s) of area(s) have you taught in in the past? (mark all that apply)

- Rural/country (23.3%)
- Small town (population less than 2000) (10.0%)
- **Town (population greater than 2000) (50.0%)**
- Suburban (23.3%)
- **Urban/large city (60.0%)**
- Not applicable-I have always taught in the area in which I teach (3.3%)
- I do not wish to answer this question (0.0%)

How many years have you taught in higher education?

Qualitative-Years of Teaching

0	2, 2, 5, 5, 5, 5
1	2, 2, 2, 2, 5, 5, 5, 5, 6, 8, 8, 9
2	0, 0, 3, 3, 5, 7
3	0, 1, 5, 5
4	0

APPENDIX E

MAP OF PARTICIPANTS BY LOCATION
Lower 48 States: 205 Participants



Alaska: No Participants. Hawaii: 1 Participant

