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Environmental Health

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Chapman University 2017 Environmental Audit: Environmental Health

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ENV 498, Senior Capstone

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Introduction

There is a very important intersection between the environment, public health, and socioeconomic factors (Braveman, 2014). These include waste disposal, water use and quality, road safety, ecosystem services, and many more. Environmental health stresses, "the health impacts of physical, chemical, and biological agents in the environment and workplace, and learns to develop strategies to measure and control major environmental health problems both locally...and in settings around the globe" (UC Berkeley School of Public Health, 2017). This overarching umbrella can have emphases in environmental epidemiology, exposure science, climate change, ergonomics, home and industrial hygiene, and molecular epidemiology. Exploring each of these branches will prove that sustainable curriculum within an interdisciplinary environmental health approach, is essential for educational institutions.

Chapman University has a wide range of majors and minors that do not capitalize on the environmental health aspects of an interdisciplinary approach. Research labs are available that emphasize the effects of environmental hazards on humans, but this theme does not infiltrate into curriculum as strongly. The development of a public health framework will help guide the process for this project. According to the Center of Disease Control, the most effective programs have procedures that are "useful, feasible, ethical, and accurate" (U.S. Department of Health & Human Services, 1999).

History at Chapman

Objectives:

1. Make current classes more robust with environmental health ideology in College of Educational Studies, Wilkinson College, and Schmid College of Science & Technology
2. Creating a solidified global health pathway for students across varied disciplines: Public/Global Health Minor

Upon reviewing Chapman's sustainability mission statement, it is clear that sustainable curriculum is a pertinent goal of the university: "Chapman University is committed to a campus culture that promotes a sustainable future. This commitment is instrumental to Chapman's mission to educate ethical and informed global citizens." (Chapman, 2017).



Figure 1. Identifying how human health, awareness, and action work together

Additionally, the 2013 Chapman Environmental Audit, states that global health issues are key when considering the format and content of classes. One of the basic excerpts from the AASHE Call to Action within the 2013 audit was, "Higher education should provide graduates with the skill set, knowledge, and habits of mind for them to prepare for challenges presented by climate change, loss of biodiversity, a world population of 9 billion in 2050, limited water resources, global health issues, and extreme poverty" (Campus Audit, 2013).

Recommendations

Low cost/effort:

- Education to faculty about what environmental health is and how it can be applicable to curriculum in different fields, specifically Peace Studies, Biology, and Education
- Looking at the current classes that address environmental health and refine the class descriptions
- Conducting more research on issues and topics that could be incorporated in classes. These could include: allergens, environmental disease, environmental factors that increase breast cancer risk, lead health effects, cellular radiofrequency radiation, climate change at the local level, and growth and disease

Medium cost/effort:

- Implement these classes as a public health/environmental health minor
- FSN 201: International Nutrition: World Health Crisis
- HON 389: The Grand Challenges Initiative
- PCST 354: Nonviolent Social Change
- HESC 310: International Health
- POSC 335: Political Economy
- ENV 329: Pollution and Environmental Health

High cost/effort:

- Develop classes that reach multiple departments and stress that carcinogens and toxins within the environment can have a large role on environmental sustainability in students' lives
 - Looking at environmental justice issues through case studies and developing policy plans to influence adverse environmental factors
- Building upon classes in the Peace Studies department would be uniquely helpful. Including a class that looks at the disease and democracy as it relates to collaborations between policy makers, healthcare professionals, and community members that seek wellness at a holistic level
- Classes such as genetics could have a stronger emphasis on how human genetics and the physical environment in tandem plays a role in the development of asthma, cancer, and other health problems.
- Redevelop current class titles and add more environmental sustainable actions to the class content

Current Status

Topic 1

Environment impact on human health trajectory

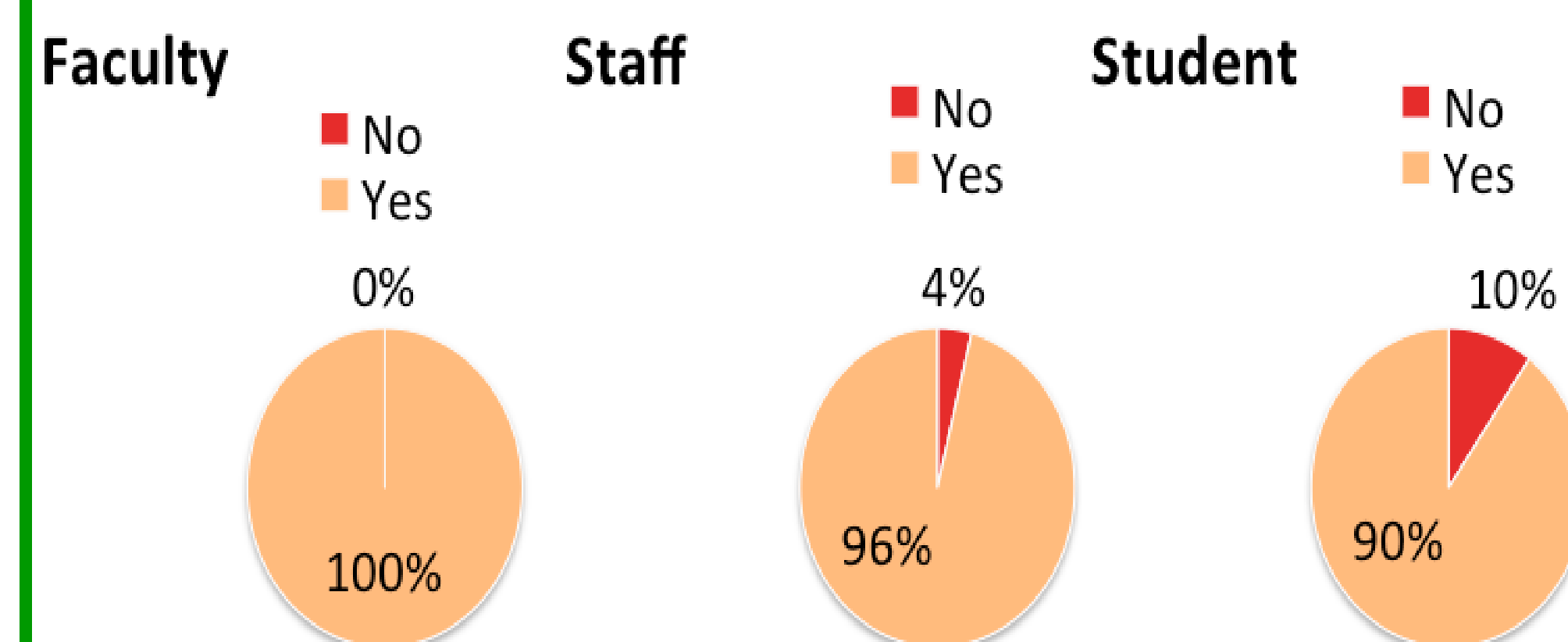


Figure 1. Shows the percentages of students, faculty, and staff that believe the environment has an impact of human health

Topic 2

Importance of learning ergonomics for the workplace

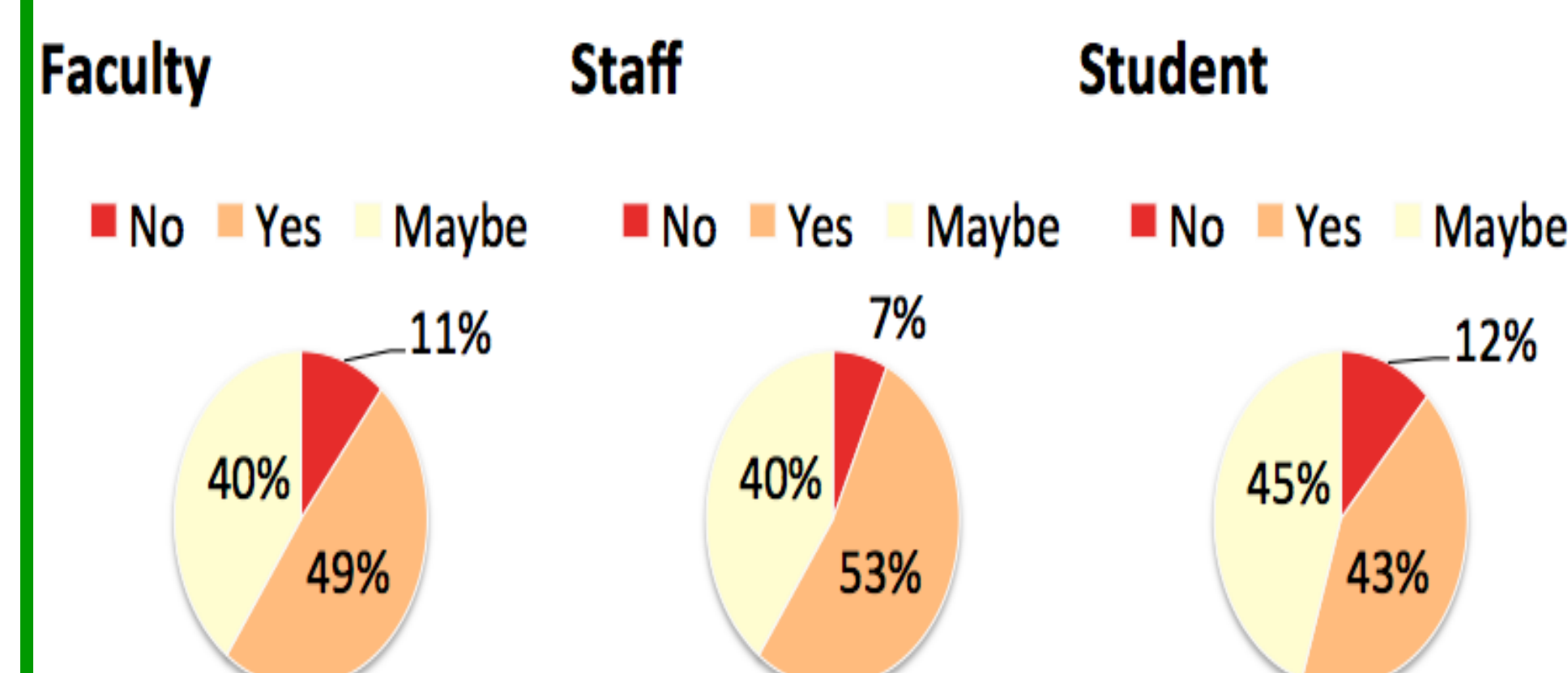


Figure 2. Shows the percentages of students, faculty, and staff that think ergonomics is important enough to be taught

Topic 3

Interdisciplinary connects between Policy, Economics, Peace Studies, and Environmental Health



Figure 3. Shows the key words from the survey that highlight the intersections of Policy, Economics, Peace Studies, and Environmental Health. Below shows key quotations from both students and faculty in response to this question.

Important Student Responses

- "These all play a role in environmental health because the way in which **policies** are shaped, eventually affect[s] the environment and how **people** use it"
- "When the concerns of environmental health aren't profitable for policy or economics, it can unfortunately be detrimental because people prioritize capital over **environmental security**"
- "We need to be smart enough about using our resources to maintain a **stable economy** and all of this can be regulated through policies established by higher figures"
- "I would imagine they play a **large role** in environmental health concerns, but I do not have a background in any of these areas"
- "They affect each other like a **domino effect**"

Important Faculty Responses

- "They help **educate people** about their personal habits and they set policy that helps us collectively increase our **sustainability** through legislation. Also, since war has huge environmental impacts promoting **peace studies** helps create an electorate who will endorse more peaceful means of resolving **conflicts**."
- "People are best served in pollution free, naturally rich environments. These environments should be available to all, not just the rich. **Climate change** creates stresses that have already led to **war**, desperate refugees, and increased xenophobia and tribalism."
- "It's all related, they are **inseparable**."
- "Policy is needed to implement **scientific data, economics** are required to provide incentives to tackle environmental health concerns. I don't know what peace studies is."

Concluding Assessment

Areas of progress

- For Fall 2017, there is an Environmental Science Course: Pollution and Environmental Health that will focus on the major issues in contemporary environmental health

Areas in which to improve

- A knowledge gap that exists is whether or not students outside the environmental major are fully equipped with the knowledge of how environmental hazards are affecting human health (Campus Audit, 2013).
- Another knowledge gap, as identified by the 2015 audit, is if faculty are being effectively trained to teach classes in sustainability (Campus Audit, 2015).

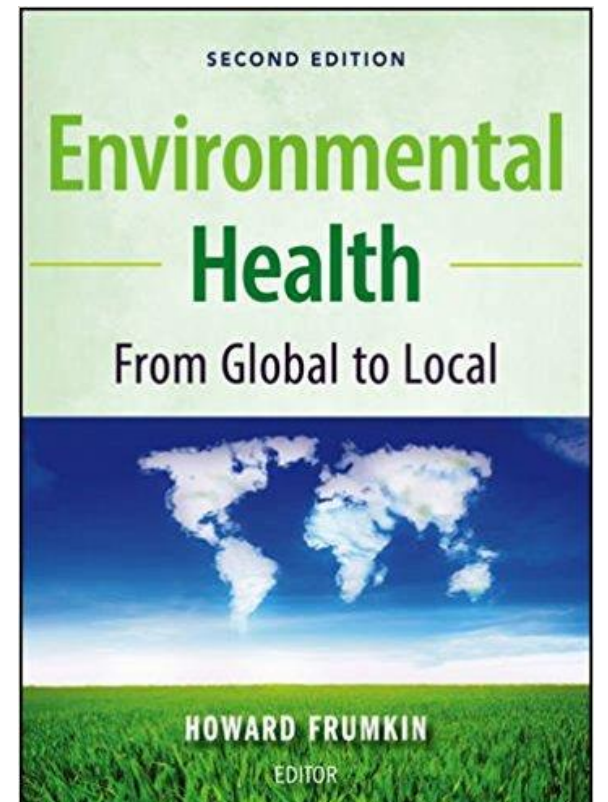


Figure 1. Textbook for Fall 2017 ENV 329-02

Future Research

- In the future, studies regarding curriculum could focus on how to redesign teaching to focus on long-term solutions, rather than short term.
- Developing more effective ways to personalize teaching models for each discipline at Chapman that follow an ecological framework.

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