UTIHP'S HIGH SCHOOL PARTNERSHIP PROGRAM
PRESENTS

TAKE ACTION! CONFERENCE 2019

MARCH 29, 2019

CASE GUIDE

FOREWORD

Thank you for your interest in the Take Action Conference 2019: Climate Change and Global Health. The case competition revolves around the prominent issue of flooding in Nepal as the effects of climate change continues to worsen. Students will be challenged to propose a practical solution to combat the issue. On the day of the conference, the students will receive the official case guide, which will provide many sources and information that will aid their progress in the case competition. Additionally, there will be undergraduate and graduate students that will be designated as mentors to help participating teams develop their proposals. This document, however, will provide teachers and students with a brief background of the flooding crisis in Nepal and the particular scenario that the students will be challenged with.

On the day of the conference, students will be given **1 hour** to brainstorm and develop their solution in teams of fours. During this time, teams will be provided bristol boards and markers to visually present their ideas. Afterwards, teams will give oral presentations of their proposals, using their posters, for 5 minutes to two judges. The criteria checklist can be found below and will also be provided in the official case guide.

Please note that students are **not required** to begin any portion of their research in preparation for the case competition ahead of time. However, for those who are interested, this document provides a brief outline of the case and is available to help guide students.

INTRODUCTION

Climate change poses alarming risks to all communities across the world. Anthropological (human-caused) environmental disruptions, such as deforestation and pollution, are disturbing the delicate balance of our planet. As a result of this, carbon dioxide (CO2) levels, temperatures and sea levels are all impacted. As CO2 levels continue to increase due to unrelentingly high carbon emission rate[1], the oceans become more acidic, causing the destruction of numerous marine ecosystems, including coral reef[2]. Temperatures across the globe are becoming more and more extreme; there has been an observable increase in the number of record-breaking high and low temperatures per year[3]. However, it is important to note that there is a significantly greater number of record-high temperatures[4,5] indicating that there is an overall trend of increasing temperature worldwide. With this increase in temperature, the melting of ice sheets and glaciers accelerate and the sea levels rise, putting both coastal communities at risk as well as mountainous regions that support glaciers, such as the Himalayan mountain range[6,8]. These effects are worsened by the increase in extreme weather and climate events, such as heat waves, droughts, prolonged downpours, and floods[9].

On August 11, 2017, extreme rainfall lead to a devastating flood that affected the entire lateral belt of Nepal[10-12]. This occurred as a result of heavy rain downpours that originated from the Chure hills[13], leading to widespread flash flooding and swelling of rivers. The flood destroyed many homes, affecting over 11 million residents and resulting in over 120 deaths[11]. Out of the 75 districts in Nepal, 27 districts were affected by the floods, displacing over 50,000 families and forcing them to take refuge in schools, roads, roofs of houses, and any other accessible location before rescue and aid assets could reach them[12]. The flood led to food and water shortages[10-12], as well as damages to powerlines, agriculture, crops and livestock[14].

In Nepal, frequent flooding due to extreme weather results in high water levels[10], destruction of property and infrastructure, food shortages, sanitation issues and increased diseases[10-12]. Although there has not been extensive research conducted on the impact of these crisis specifically in Nepal, research from other parts of the world can help us to better understand the impacts of flooding. In regards to sanitation and health, floods have been shown to increase the risk of both water-borne diseases including typhoid fever, cholera, and hepatitis A, as well as vector-borne diseases including malaria, dengue and west nile fever[13-15]. Taken together, the high risk of disease, lack of clean drinking water and sanitation, destruction of homes, and displacement of families, demonstrates the severity of natural disasters and the huge impacts that arise as a result of climate change. The 2017 Nepal flood left a devastating mark on the people it affected; however, investigating the aftermath of this flood can provide insight into potential strategies to manage similar inevitable cases in the future.

CHALLENGE

Monsoon rains have triggered floods and landslides in the Karnali River Basin (in western Nepal), destroying huge amounts of property and infrastructure, and affecting over 10,000 people. The survivors are now facing the following issues arising from the aftermath of the floods:

1) Loss of residential areas, leaving thousands of people homeless and without shelter
2) Destruction of food storages, as well as agriculture and livestock sectors
3) Poor water quality and sanitation, worsened by risen sediments and pollution from the floods

As a UNICEF crisis relief and response advisor to the government of Nepal, your team is tasked with developing an infrastructural strategy to combat one of these urgent issues that have arisen as a result of flooding. Using the resources that have been provided, **work in teams of four to propose a solution to one of these issues.**

REFERENCES & RESOURCES

1) https://climate.nasa.gov/vital-signs/carbon-dioxide/
2) https://www.bbc.com/news/science-environment-43391388
3) http://www.climatesignals.org/data/record-high-temps-vs-record-low-temps
4) https://phys.org/news/2016-01-temperature-co2-emissions.html
5) https://climate.nasa.gov/vital-signs/global-temperature/
6) https://www.climate.gov/news-features/understanding-climate/climate-change-global-sea-level
7) https://climate.nasa.gov/vital-signs/sea-level/
8) https://oceanservice.noaa.gov/facts/sealevelclimate.html
9) https://nca2014.globalchange.gov/highlights/report-findings/extreme-weather
10) https://www.wateraid.org/us/media/nepal-floods-water-sanitation-and-hygiene-urgently-needed-to-prevent-public-health-crisis
11) https://www.unicef.org/stories/flooding-affects-millions-bangladesh-india-and-nepal
12) https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(17)30569-8/fulltext
13) http://archive.nepalitimes.com/blogs/thebrief/2017/08/13/flood-of-recrimination/
14) https://www.unicef.org/wash/nepal_100726.html
15) https://www.who.int/hac/techguidance/ems/flood_cds/en/

CASE COMPETITION RUBRIC

**Note: This is a preliminary version of the finalized rubric, details are subject to change.*

	SCORE				
PROPOSAL IDEA: - Provides ONE solution to one or more of the issues provided - Original and creative - Detailed and well thought-out, students are able to explain and justify their solution	1	2	3	4	5
ORAL: - All members are participating and presenting - Group is able to effectively answer any questions judges may have - Good flow in voice, volume, body language, eye contact	1	2	3	4	5
VISUAL: - Ideas were presented on the poster in a clear and cohesive matter - Poster supplements the verbal presentation of the proposal and helps with delivery - Easy to follow	1	2	3	4	5
COMMENTS:				TOTAL:	