UL Standards & Engagement

Human Health, Climate Adaptation & Environmental Health

Human Health: The ability of individuals or communities to adapt and self-manage when faced with physical, mental, or social challenges. It is the state of complete physical, mental, and social well-being and not just the absence of disease or infirmity.

Climate Adaptation: Long-term shifts in the overall temperature of the Earth and its weather patterns through natural variations in the solar cycle and through human activities with massive and permanent ramifications.

Environmental Health: Accessing and controlling factors in the environment that can affect human health.

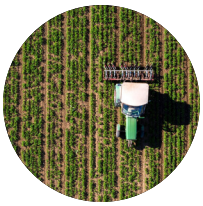
Air Pollution: The contamination of indoor and outdoor environments by any chemical, physical, or biological agent that modifies the natural characteristics of the atmosphere.

Chemical and Biological Agents: Compounds and solutions found in daily purchases, like clothing, toys, textiles, and electronics, that can lead to poisoning and cancer.

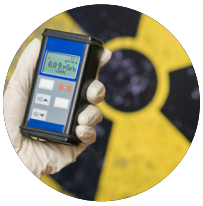
Noise: Any unwanted or disruptive sound (usually exceeding 75 decibels) that affects the health and well-being of humans and other living things.

Climate Change: Long-term shifts in temperature and weather patterns through natural variations in the solar cycle and through human activities, like burning fossils, that have massive and permanent ramifications.

Inadequate Access to Clean Water: Inadequate management of water infrastructure leads to contaminated or chemically polluted water supplies.



Agricultural Practices: The production of food, fiber, and materials for shelter, providing a source of livelihood for populations but leading to death and disease through malnutrition, infectious diseases, and chronic diseases.



Radiation: Energy that has an electric and magnetic field that comes from a source and travels through space at the speed of light and can cause skin burns, acute radiation syndrome, cancer, and cardiovascular disease.

International Opportunities

- Cleaner technologies to reduce industrial emissions
- Cleaner modes of transportation
- Low-emission fuels and combustion-free power sources
- Waste reduction, separation, and recycling
- Effective and economical drinking water filtration systems
- Restricting the use of harmful chemicals and biological agents

[1] [Matt Miltonberger]. (2017, May 19). Climate Change - We are the PROBLEM & the SOLUTION (Animated Infographic) [Video].

[2] Vineis, P., & Fecht, D. (2018). Environment, cancer and inequalities - The urgent need for prevention. Eur J Cancer, Epub 2018 Jul 11. https://doi.org/10.1016

[3] Preventing noncommunicable diseases (NCDs) by reducing environmental risk factors. Geneva: World Health Organization; 2017 (WHO/FWC/EPE/17.1). Licence: CC BY-NC-SA 3.0 IGO.

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Climate Change

Light from the Sun enters the Earth's atmosphere and is partially absorbed and partially reflected. The reflected energy is partially retained in the Earth's atmosphere due to greenhouse gases, leading to increased global temperatures (greenhouse effect).

Fossil Fuel Burning: Coal, oil, natural gas, and gasoline are the largest pollutants of carbon

Animals: Excrement releases toxic gases that are more effective at trapping heat

Agriculture & Deforestation: Removes plants/trees that absorb carbon dioxide

Waste & Recycle Pollution: Humans produce 11.6 trillion pounds of trash per year

Contributors to the Greenhouse Effect

The burning of fossil fuels became a necessity following the industrial revolution, which led to an exponential increase of CO_2 in the atmosphere.

- Approximately 40 billion tons of CO_2 is produced by human activity, annually[1].
- Volcanoes only produce 500 million tons of volcanic CO_2 per year[1].

Over the past century, the Earth's temperature has increased by approximately 2°F and is expected to rise from 2-10°F over the next 100 years[1]. As global temperatures rise, the natural food chain will be impacted, and humans will not have the resources to sustain life on Earth. Rising temperatures will lead to ocean acidification, melting of the polar ice caps, and an increased frequency of natural disasters.

Environmental Health

Environmental health is a portion of human health and disease that is determined by factors in the environment. Environmental health involves accessing and controlling factors in the environment that can affect human health. Clean air, stable climate, adequate water, sanitation and hygiene, safe use of chemicals, protection from radiation, healthy and safe workplaces, sound agricultural practices, health-supportive cities and built environments, and a preserved nature are all prerequisites for good health. Healthier environments could prevent almost one quarter of the global burden of disease.

•23% of all deaths worldwide and 22% of all disability-adjusted life years (DALYs) are attributable to the environment[2].

The environment directly influences health through harmful exposures, inadequate infrastructure, degraded ecosystems, and poor working conditions. Environmental risks, like climate change and air pollution, disproportionately affect developing countries.

- Nearly two-thirds (8.2 million out of 12.6 million) of all deaths attributable to the environment are associated with noncommunicable diseases (NCDs)[3].

Reducing environmental exposures by reducing environmental risks can greatly reduce the global burden of disease.