

GLOBAL CHANGE: PAST, PRESENT, AND FUTURE

In this science-oriented class we will discuss the following topics:

Evidence of climate change. Some of the evidence that scientists use to determine how our climate is changing, including glacial retreat, bud break and leaf fall, species migrations, rising temperatures, changes in rainfall patterns and amounts.

What determines climate. The Earth's orbit, the tilt of the Earth's axis, the effect of greenhouse gases and changes in the Earth's albedo. How CO₂ is naturally regulated by Earth's feedback systems.

The Earth in the past. How the climate of Earth has changed over geologic time and how we can use proxy data to understand these changes. How plate tectonics works, and how this theory can explain the distribution of fossils and species.

The growth and demographics of the human population. How the human population has changed in size and use of resources over time. Predictions about the future growth of the human population. Pandemics and their influence on human history.

Global warming and ocean acidification. Which greenhouse gases are important and why, how the oceans and atmospheric air circulation redistribute heat from the tropics to the poles and how these currents might change in a time of rapid warming. The effects of ocean acidification on the ocean's biota.

The loss of biodiversity. What a mass extinction event is, when these events have occurred in the past, and the principal causes of the mass extinction occurring today. Human efforts at reversing at least some of these extinctions.

Global change and social justice issues. Which human populations are disproportionately affected by climate change? Is climate change responsible for some of the human migrations and revolutions which have occurred in recent years?

The politics of climate change denial. The influencers of climate denial, names to recognize as prominent climate deniers, arguments used to deny climate change and human influence in this change. We will end with a discussion of a few possible methods we can employ as humans to moderate climate change in the future.

Classes will consist of lectures, discussions, suggested readings and occasional videos. A well-regarded Environmental Science textbook will be recommended to students wanting to learn more than is covered during class. This book is available electronically.

Leader: Anne Soos is a past division head at Stuart Country Day School of the Sacred Heart in Princeton, NJ, where she was also science department chair and a science teacher. She retired from The Hun School of Princeton in June 2018, where she taught a variety of science classes, including AP Environmental Science and AP Chemistry. After retiring from teaching, Anne joined the Princeton Environmental Commission. She is a board member of the Princeton Adult

School, and volunteers as an AARP Tax Aide. During the summer, Anne presents classes to science teachers interested in environmental science. This will be her first class for Evergreen.

Mondays: 10:00 a.m. to noon, 8 weeks: February 22 through April 12

Maximum: 25