After Fossil Fuels: What's Next? Edward Church, Ph.D. email: church@berkeley.edu
OLLI Summer, 2019 - Syllabus

The Course

How will humans adapt culturally to climate change? Most discussions concerned with global warming and the climate change it will cause tend to center on extreme weather, sea level rise, and other traumatic effects of global warming. This course briefly incorporates the latest in that information as a starting point, and expands from there, to the human adaptation required from climate change, especially here in the Bay Area.

Reducing the greenhouse gases that lead to global warming will necessitate the abandonment of fossil fuels. But, the unlimited use of fossil fuels - petroleum, coal and natural gas - is the foundation of our current economy and society. The transition to the "post-carbon society" will be challenging. By beginning now, we can lessen the worst aspects of the transition and enhance the best.

What shifts will occur in how we live our lives as individuals and as communities? What might the future hold for us, and what does that mean for what we do now?

The course will be structured around the highest emitters of greenhouse gases we see in our daily lives, and look at how they will change as we reduce their "carbon footprint." We will look separately at energy, transportation, food, consumer goods, the urban landscape, and beyond.

We will make generous use of illustrative and entertaining slides, and generate dialogue with OLLI participants. Using the best climate research, we will project out some possible social and economic effects of weaning ourselves from fossil fuels. Since all such projections involve creativity, the creativity of OLLI members will also be engaged.

The Classes

1. Diving right in!

(a) Introduction to global warming fundamentals, short and long term consequences. We'll summarize the most recent report from the Nobel Prize-winning Intergovernmental Panel on Climate Change and other reports relevant to the U.S. and California.

(b) Effects of global warming on natural resources. What generates the most global warming gases? We will outline some responses from government and business.

(c) Alternatives to reducing fossil fuels: technology that "scrubs" greenhouse gases out of the atmosphere; planting trees; "geoengineering" to cool the planet.

(d) A look at our first subject area: Energy

Where does our energy come from: fossil fuels, wind, hydro-electric, solar, biomass, manual labor. Where is energy used for? What needs to change? How will we evaluate and implement the best choices?

In this first class, we will also preview of the rest of the course: knowledge and themes, analytical tools, process, and a glimpse at the "post-carbon society"

2. Cities, Infrastructure and Transportation

(a) How will our buildings work in the post-carbon society? What will these changes will mean for our homes, workplaces and public gathering? What kind of infrastructure might our cities need: roads, pipes and wires?

(b) What will be the roles of electric vehicles, driverless buses, bikes, electric scooters? What will we do with all our gasoline-powered vehicles?

(c) What about cruise ships, cargo ships, airplanes?

3. Agriculture, Food and consumer goods

(a) Greenhouse gases and agriculture. Effects of clearing forests for animals and food crops.

(b) What kinds of foods create the most global warming, and what might we eat in the post-carbon society?

(c) How does consumption of goods and services produce greenhouse gases, and how will that change? What is "embedded carbon?"

(d) What are financial investment strategies to prepare for the post-carbon society, e.g. Socially Responsible Investment, Impact Investing, Triple Bottom Line investing?

4. Transition to a Post-Carbon Society

We'll put it all together! We'll review the mountain of information from all the classes. We'll discuss the opportunities and constraints in a world shifting to a new climate reality. How will this affect future generations? What can we do now?

Some suggested reading:

The Uninhabitable Earth: Life After Warming, by David Wallace-Wells;

Drawdown: the most comprehensive plan ever proposed to reverse global warming by Paul Hawken;

Losing Earth: the Decade we Almost Stopped Climate Change, New York Times Magazine

The climate science, business and social innovations are changing so rapidly that some people will want to track them as I do, via email newsfeeds, such as GreenBiz.com. There are many more, which I would be happy to share.