

Thank you Sam.

Sam and I have hoped for an event like tonight, ever since we paddled together on the Potomac River ...many many years ago!

I was humbled by the invitation to give opening comments at this Inaugural Meeting of Planetary Health. **The best speaker, if he were alive today, would of course have been Tony McMichael.** So I would like begin, with Tony's words that are as accurate today as they were 25 years ago.

In his widely acclaimed book "Planetary Overload", published in 1993, Professor McMichael begins the book:

*"Homo sapiens has existed for less than one 10-thousandth of Earth's lifespan – and, indeed, for less than 1-thousandth of the time since animal life ventured from the oceans onto the dry land. Humans are newcomers, with no special immunity against the usual fate of biological species on Earth: **extinction**. Indeed, it is just now becoming conceivable that within several generations the human species may face threats to its survival because of its **disruption of Earth's life-supporting ecosystems.**"*

And he continues, *"Our aggregate impact upon the biosphere is about one million times greater than in pre-agrarian days. We are consequently overloading Earth's capacity **to absorb** otherwise non-toxic waste gases, **to replenish** slowly-renewable resources such as soil and groundwater, and **to sustain** genetic and ecological diversity. It is these disruptions that comprise an unprecedented threat to our life-support systems."*

While others had previously raised similar concern, I feel that Tony McMichael's insights at the **nexus of human health and global systems** serve as foundational beginnings in our emerging focus of Planetary Health.

But alas, Tony died 2 years ago and is not here to lead off this momentous occasion to launch Planetary Health.

I think **my Wisconsin connection**, however, qualifies me somewhat to help launch activities in Planetary Health. Recall the famous **Wisconsin naturalist, John Muir**, who said, "When we pull on one thing, we find it connected to everything in the universe." And **Wisconsin Senator Gaylord Nelson**, who founded Earth Day ...and was instrumental in establishing the US EPA.

But probably most aligned to Planetary Health was **Wisconsin conservationist, Aldo Leopold**, who is best known for his "**land ethic**," which calls for an ethical, caring relationship between people and nature. Leopold shifted the focus away from the health of individuals or even populations, and guided us to "look to the land" or the foundation upon which life depends; and if those natural systems (providing natural resources) are healthy, so too are the dependent organisms – and with Planetary Health, humans are one of the dependent organisms.

**What is Planetary Health?** According to the Rockefeller Foundation/ Lancet Commissioned Report, Planetary Health is “The Health of Human Civilizations and the natural systems on which they depend.” So, indeed, perfectly in step with Professor McMichael’s teachings.

Swedish Scientist, **Johan Rockstrom** has described “Planetary Boundaries” from ocean acidification and nitrogen cycles, to stratospheric ozone, biodiversity and more. I won’t go into statistics, for which many of you know better than I, and many of you in the audience are impressive scientists making the health connections across many of these degraded systems; the content of this weekend’s conference.

But will mention a couple of human health-related **examples**.

Most of you recall one clear example being the disappearance of the **Aral Sea in Uzbekistan** ...though only clear in retrospect, and not so clear as a **slow-moving disaster**. Briefly, the former Soviet government wanted to become the world’s largest cotton producer, and so diverted 97% of the river water running into the Aral sea to grow this **cotton monoculture**. The result? Only a quarter of the Aral Sea remains, and the local population suffers from malnutrition (no more fish), anemia, high infant mortality, and women with organochlorine residues in their breast milk; hint – in 1980, **44% of all pesticide usage** in the former Soviet Union was applied in Uzbekistan.

Another example stems from **our own work in the Amazon**, where –after controlling for human population density -- we showed a link between levels of **deforestation** and the abundance of the primary mosquito species that causes **malaria** in this region of the world.

But I have **some breaking news** related to my most familiar earth system:

Last week the Mauna Loa Observatory recorded **its first-ever carbon dioxide reading in excess of 410 parts per million**.

The news went on to say, “Carbon dioxide hasn’t reached that height in millions of years. It’s a new atmosphere that humanity will have to contend with, one that’s trapping more heat and causing the climate to change at a quickening rate.”

If you don’t know the health risks from climate change ...then in my 20 years of public speaking I have totally failed ...so I’m assuming you all know these ...and that I’m not a complete failure. But let me mention a relatively new one that includes civilization collapse, and thus in the realm of Planetary Health.

The **Syrian civil war** was preceded by years of drought; actually the worst drought in the instrumental record. More than 1 million peasants moved into the cities; rural to urban migration rates were 4-times normal. This situation, combined with food price shocks, led to riots and contributed to the civil war with 400,000 killed, and 9 million fleeing refugees.

**Planetary health** not only addresses environmental aspects of human health, but also **requisite political, economic, and social determinants** as well, and Syria is a prime example.

We need to **redefine development**. Sustainable development goals are an important step, but until we **discard the Gross Domestic Product** as a leading indicator, we are doomed to fail. GDP ignores the costs of ecological disruption (thus these critical resources are invisible or “externalized”). **Bhutan’s “happiness index”**, that includes criteria of environmental sustainability and social equity, might be one model to strive for.

In the US, the supreme court ruling on “Citizens United” now classifies **corporations as individuals and –consequently– money as free speech**. One result: today’s level of financial inequity between rich and poor is equivalent to that of the “Gilded Age” before national income taxes even began ....and the upward trend is alarming.  
Many scholars agree, that for environmental health solutions to be lasting, **solving economic disparities is a prerequisite**.

In the US, we have a new administration. We are seeing a very concerning disregard for science, which of course worries us about what kind of information will be used in decision making. Here’s a quote this week from the Office of Management and Budget Director Mulvaney who said, **“Spending on climate change is a waste of your money; we’re not going to do that anymore.”**

But since we are spending **about 11-times more in federal expenditure** for oil, gas and coal, ...compared to renewables.... I guess that means we ARE spending on climate change –but in causing it, rather than solving it!

To cut to the chase, we need to be that much more vigilant as to the goings on in national politics. And strong nationalistic trends around the globe will not help the cause of Planetary Health, where we must **view the earth’s natural resources as a global commons**.

**Imagine you’re inside the international space station** looking at the earth through the window. Do you see the earth’s surface carved into countries with national borders? Walls should not be built... no matter who pays for them.

### Reasons for Optimism

So why do I remain optimistic under the current circumstances?

I heard Michael Bloomberg recently tell nations of the world not to worry about US national climate change policy; **cities are already way ahead and not looking back**. And what if the

Clean Power Plan is blocked ...to be honest, even in the Midwest many states **have already met 50-100% of the 2030 targets.**

And with **solar power prices dropping** 80% in the past 7 years, and wind power competitive on the market, I don't think the coal industry is coming back.

And with **chronic diseases on the rise globally**, how painful would it be to save millions of lives and billions of dollars in avoided mortality and hospital costs from **carbon policies that clear the air and also promote physical fitness through "active transport"** --we've run the #s and it really is in the billions of dollars. And this doesn't even include enormous gains from a **more sustainable food system**. Local sustainable gardens are blooming across the globe, and the adage remains the same; think globally, act locally.

And finally, the **Pope's** encyclical *Laudato Si*, on **earth as our common home**, brings religious outrage and morality into the mix.

In short, **we cannot maintain a healthy existence on a sick planet with degrading ecosystems and a disrupted climate system.** Of course the planet will remain...but *Homo sapiens* might not.

And I can't help end a talk on planetary health without a quote from a planetary hero. Don't forget what **Ghandi** said, "Be the change you wish to see in the world."

Thank you very much and **welcome to Planetary Health!**

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