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SRS Senior Radiologists Section Notes

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Perspectives on Life and Economics From an Economist

Gary W. Sorenson, PhD, Chairman (Retired); Department of Economics, Oregon State University

Gary Sorenson

Requiring brevity in this space, I need to start with an assertion: the collective ecosystems that serve to make the planet Earth hospitable for life in all forms are seriously eroded given the past and present press of populations and economic growth. That means human life on Earth may be on a short path to extinction.

Our planet is billions of years old and 70% covered by water. It is characterized by a myriad of ecosystems that support life. Each system is uniquely specified, through geography and geology, while supporting a variety of flora and fauna. These systems vary in size. Human life put down roots in some combination of said systems. Populations grew or expanded, as did economies.

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Choosing to ignore human history prior to about 1880, my focus is on the last 140 years or so, which seem trivial in "Earth time." In 1850, the global population was estimated at 1.3 billion people. In 1950, it was 2.5 billion, and, in 2021, it was 7.8 billion people. Estimates suggest that global human population will reach 9.7 billion by 2050—an exponential growth!

Similarly, the global gross domestic product (GDP) has grown exponentially. In 1970, GDP was $3 trillion; by 1980, $11.3 trillion; $66 trillion in 2010. In 2020, GDP was $85 trillion. This is a remarkable growth curve, but herein lies the problem.

The growth in global GDP has supported this population growth. That growth in annual production of global goods and services was due to several transformative processes.

First, consider the implications of the Industrial Revolution, evolving in just the last 140 years. The miracles of engineering, the power of fossil fuels, the blossoming of chemistry, the revolution in food production, the acceleration of basic technologies, Moore's Law of circuitry, the explosion of knowledge—all seem like a never-ending list.

Second, and this may be the big one, there has been the power of Adam Smith's "invisible hand." Forget about the flirtations that Russia and China had with communism. The growth of which I speak came through the dominant thrust of a basically capitalistic and market-based economic system. Markets and profits dictate where resources go. And this machine/system has demonstrated the power to do amazing things related to the production of those goods and services. But as Milton Friedman used to say, "there is no such thing as a free lunch."

Third, this market- and profit-oriented machine, which has led to the exponential growth of global GDP and provided support for exponential growth in global population, has a voracious appetite for space, raw materials, and energy. It needs land and has paved a "zillion" square miles with concrete, having many adverse consequences, such as rechanneling water flows. It needs basic materials, like timber, minerals, and water. Its appetite for oil and coal has seemed limitless. In the process of obtaining these resources, the ma-

Perspectives *continues on page 2*

A Word From the Chair

by
Bruce L. McClennan, MD

Getting to Beyond…

As 2022 unfolds, I am pleased to share the words of a new, good friend: Gary Sorenson, PhD. His opinion piece is a synopsis of some of our substantive conversations in a golf cart. Those who have played the game of golf with me might consider this to be a diversion from my game, but I assure you it is actually a compliment to it!

A benefit, nay, reward of my move in 2020—to the Pacific Northwest for much of that year (thankfully, east of the Cascade mountains)—is access to three golf courses at Eagle Crest, where I live. I have enjoyed the company of some very interesting people, and they, like most of us in the SRS, have endured a semi-cloistered life these past few years. 2022 (someone said 2020) seems to be morphing from pandemic to endemic life in regards to the myriad viruses and their "mutant" cousins.

Hopefully, there will not be a regression too far back toward the ever-evolving "normal" of 2020–2021.

To get beyond where we've been, so to speak, will take a fortitude and large amount of hope, which I have witnessed among many friends, colleagues, and family. Beyond is where we want to be, as uncertain as it seems right now. A new favorite poet captures the sentiment. The late British-Canadian poet Robert W. Service wrote much about northwest US and the Yukon. I have taken some poetic liberties and reversed the first and last stanzas, quoting them out of order from the original version:

THE LAND OF THE BEYOND
"…there is always a Land of Beyond
For us who are true to the trail;
A vision to seek, a beckoning peak.
A farness that never will fail;

Chair *continues on page 2*

Perspectives *continued from page 1*

chine has decimated mountains, forests, water sources, and entire ecosystems that depend upon them. Thus, an array of residual waste, much of which is not measured in the production process, is released as third-party costs (i.e., someone else pays for their disposal).

I refer here to airborne waste from fossil fuels, methane from agriculture, water runoff from manufacturing facilities and agriculture, residual waste from eradicating mountains in the pursuit of minerals, etc.

Fourth, while this great market- and profit-oriented production machine has evolved at lightning speed, encroachment upon or destruction of a huge portion of the global ecosystems that support life have occurred. Oceans, forests, and wetlands are gone or damaged, and species have disappeared.

This leads me to an interesting, science-based observation. I recently encountered a book, entitled *A Planet of 3 Billion*, written by a renowned geographer, named Dr. Christopher Tucker. In a nutshell, Tucker says that the population growth I mentioned, along with exponential growth of global GDP, have combined to make unsustainable the survival of our planet as a place hospitable for human occupancy. Without arguing precision, he says Earth cannot reclaim the ecosystems which are disappearing or have been destroyed with any more than a population of approximately 3 billion, not the 7.8 billion people present today. The current global warming phenomenon fits closely with this prediction. As sobering as this may seem, I think Tucker was actually "spot on."

If you're still reading, and your mind is filled with questions and some uncomfortable images, you may wonder how to pare global population in some timely manner? The pandemic and upcoming food shortages in mostly less developed countries, due to climate change, are unfortunate starters. Population decline seems a requirement to stem the demand for global infrastructure, goods, and services, while slowing the press of economic growth.

And here, in my opinion, is the issue no one seems to want to talk about; any real effort to slow the process of growth upon growth upon growth, to reduce ecological destruction, implies living smaller and living with less. It means a significant change in lifestyles, particularly in the more developed parts of the world. To even start, some collection of credible leaders would have to "sell it." Right now, those driving this global capitalistic machine seem focused on short-term profits, often appearing oblivious to what said support does to that which, in turn, supports life on the planet. I conclude with a question for all. Hypothetically, if, through some collection of mechanisms, the global population is moved to decline by some order of magnitude, then what will the landscape supporting societal infrastructure and its economy look like?

Chair *continued from page 1*

A pride in our soul that mocks at a goal,
A manhood that irks at a bond,
And try how we will, unattainable still
Behold it, our Land of Beyond!"

"Have ever you heard of the Land of Beyond,
That dreams at the gates of the day?
Alluring it lies at the skirts of the skies,
And ever so far away;
Alluring it calls: O ye the yoke galls
And ye of the trail overfond,
With saddle and pack, by paddle and track,
Let's go to the Land of Beyond!"

With a great deal of hope and fortitude, plus planning and precautions, our journey to meet in New Orleans, LA from May 1–5 for the 2022 ARRS Annual Meeting goes on.

As we get beyond the virus, into the company of colleagues and friends in one place, "NoLA," always kind to our society and rewarding in its return on our investments as a society and individuals in the educational process that holds us all together, we can celebrate collectively in person again.

Gary W. Sorenson, PhD began his academic and real-life career in a two-room elementary school near Santa Maria, CA. He captained the football and baseball teams, managing to play all 4 years of high school. He entered Fresno State College to play baseball but dropped out to work, hunt, begin a lifelong marriage, and raise a family. Returning to Fresno State, he was encouraged to attend graduate school on a National Defense Education Act, fellowship following, which he obtained a faculty position and his PhD in economics. Dr. Sorenson obtained a large grant from the US Department of Labor to establish an institute for manpower studies at Oregon State University, while becoming chairman of the department of economics. Upon his retirement, he ran a Scandia down business, repaired sewing machines, built homes and commercial buildings, developed shipping and accounting software, and piloted large yachts in the Columbia River and Pacific Northwest. Usually with one or more golden retrievers on board. As his golfing partner for the past year and a half, Dr. McClennan was able to convince him, between rounds, to contribute to *SRS Notes*.

SRS Birthdays

We wish these SRS members a very happy birthday.

January	February	March	April
1 Jash Patel	14 William C. Acton	2 Frederick Dean	2 Paul M. Chikos, Jr.
13 Robert J. Corcoran	18 Richard E. Fulton	5 Lisa S. Wichterman	14 Carlos Muhletaler
26 Edward O'Brien	25 Bruce L. McClennan	16 Joel A. Schneider	25 Anton N. Hasso
		20 Gordon S. Perlumutter	27 James A. Junker
			30 Jon D. Shanser

Word Search!

F B R E M S Z Q G D B L W Z I W B W C A T H O D E W N C E K
M C F C U C Y J P D S N J E D Y C U S M R K T T I Z Q V S C
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A G R A Y A I F V T Q C B Z A F B N P X H B W A C U Q O Y Z
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R E Y A L N R Y R B B V D E C F U E S W E I Y C A Q X X P K
U L S D K H A O X U A G F X F G Z N F Y H U J Y U B P T G A
A E I T O J D T C O H P Q N O U N R G I H I U A W H L Q U M
W O Q Q I W N X Y G W B J Q B Y N H M S Y L N Z T T X X K B
U T B Y Z C O B L P C O L G K U J J P K T T S E E D O N A D
L O G E G L C X K V J C Z I I U C L J F U E F Z C Q A B M N
H H O W C B E Q D M T M R D D R V D F M Z W N R K E Y D S R
M P Y C M C S H X G C O H E R E N T N I Q P H P V K H J P T

Air Kerma
Anode
Artifacts
Autotransformer
Brems
Cathode
Characteristic
Cascade
Coherent
Collimation
Compton
Gray
Inverse Square Law
Ionization
Noise
Ohms Law
Photoelectric
Primary Beam
Quantum
Remnant Radiation
Scatter
Secondary Beam
Shielding
Sievert
Standard Precautions
Tungsten
Xray

Sudoku! *(answers)*

9	2	5	3	8	6	1	4	7
6	3	1	7	9	4	8	5	2
4	7	8	5	1	2	9	3	6
5	9	3	6	2	1	7	8	4
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8	1	7	9	6	5	4	2	3
2	6	4	1	3	8	5	7	9
3	5	9	2	4	7	6	1	8

Tell your friends…

"The Senior Radiologists Section (SRS) provides an opportunity and a forum for senior members of the ARRS to be kept informed on the new developments in radiology, as well as enjoy the camaraderie of their colleagues." *—John Tampas, former chair of SRS.*

Benefits include:

- SRS newsletter, *SRS Notes*
- Discounted registration fee to the ARRS Annual Meeting
- Annual Meeting reception
- SRS Annual Meeting activities (includes sponsored speaker and special tours)

To qualify to join this special interest group within the ARRS membership, you must meet one of the following criteria:

- Be a current emeritus ARRS member (fully retired) age 60 or older
- Be a current ARRS member age 65 or older

SRS dues are in addition to any membership dues that are owed to the ARRS related to an individual's membership category. Payment of all applicable ARRS dues is required to be a participant of the SRS.

Interested ARRS members may download an SRS application at www.arrs.org/SRSapp and mail it, along with payment, to: ARRS-SRS, 44211 Slatestone Court, Leesburg, VA 20176-5109. Questions regarding SRS membership or renewal should be addressed to Sara Leu at sleu@arrs.org or at 866-940-2777 or 703-729-3353.

Upcoming ARRS Annual Meeting

New Orleans, LA
Hyatt Regency
May 1–5, 2022

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