

WAKE UP, AMERICA !

Wake Up, World !

The Future Is Coming

What Climate Change and World Change
REALLY MEAN
For *All* of Us

– OR –



"Wake Up, Wake Up! The British Are Coming!" – Paul Revere's Ride

Art: Eggleston-Google

Science, Universities, And A Great American Challenge:
Coping With Climate Change and Environmental Degradation

Part 2 of a 2-Part Series

Work In Progress Draft WUA-WUW-CCSS 2016.23

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C h a o s & C o m p l e x S y s t e m s S e m i n a r

Department of Physics, University of Wisconsin-Madison

Tuesday, March 15, 2016 – 12:05 – 1 PM

Chamberlin Hall, Room 4274

1150 University Avenue, Madison, Wisconsin

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Website In Preparation



Carol Stuart Photo

Grandpa & Noah Working Together, San Francisco, December 2015

Coping With Climate Change and Environmental Degradation

Science, Universities, and A Great American Challenge

Bernard Z. Friedlander, PhD & Noah M. Friedlander
Chaos & Complex Systems Seminar
Department of Physics, University of Wisconsin-Madison
March 15, 2016-Chamberlin Hall Room4274, 12:05-1 PM

Abstract

Under pressures of Climate Change, national political stasis, and other potent factors, American universities, colleges, and schools face harsh challenges unlike any our professions have ever encountered. This is due largely to profound contradictions between national needs in our changing society and pressures within and between our varied and competing American sub-cultures.

This presentation views the issues in four major categories.

1. **Evidence:** facts about suppressive forces affecting science, academia, and education.
2. **Limited Time:** an urgently critical factor.
3. **Suppressive Impacts:** Climate Change and Environmental Degradation as force multipliers.
4. **Prescription:** [NEW WAYS TO EXPAND AN AGENDA FOR POSITIVE CHANGE.](#)

Science, Universities, and A Great American Challenge

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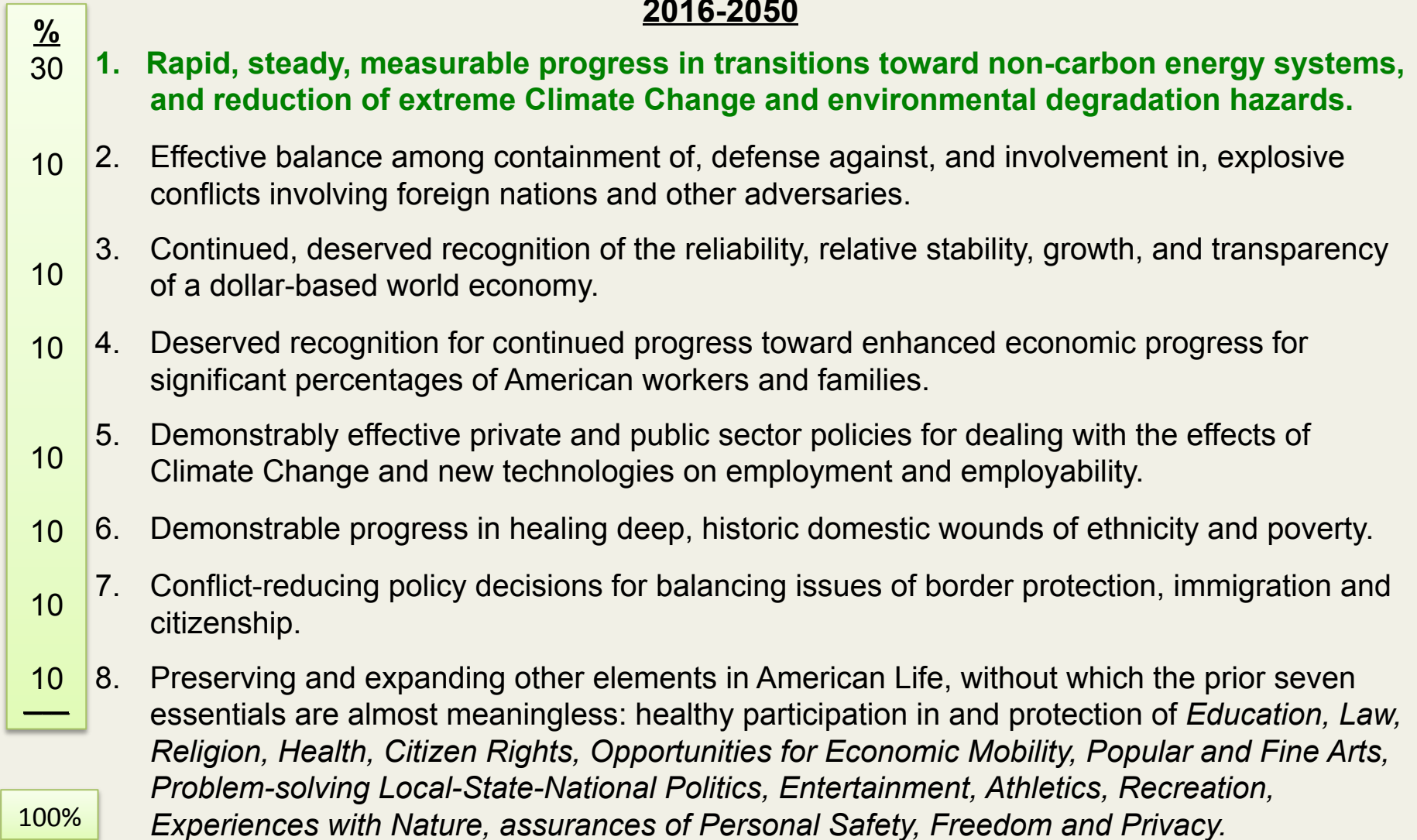
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Science, Universities, and A Great American Challenge

I.

Eight Major Determinants of American National Interest and World Status:
2016-2050



100%

Percents Hypothetical

II. Critical Time Lines

**It is impossible
to exaggerate
the urgency of
these issues !**

Science, Universities, and A Great American Challenge

Peter Geckler, et al, *Climate Change Letter* – Published: 18 January 2016

Industrial-era Global Ocean Heat Uptake Doubles in Recent Decades

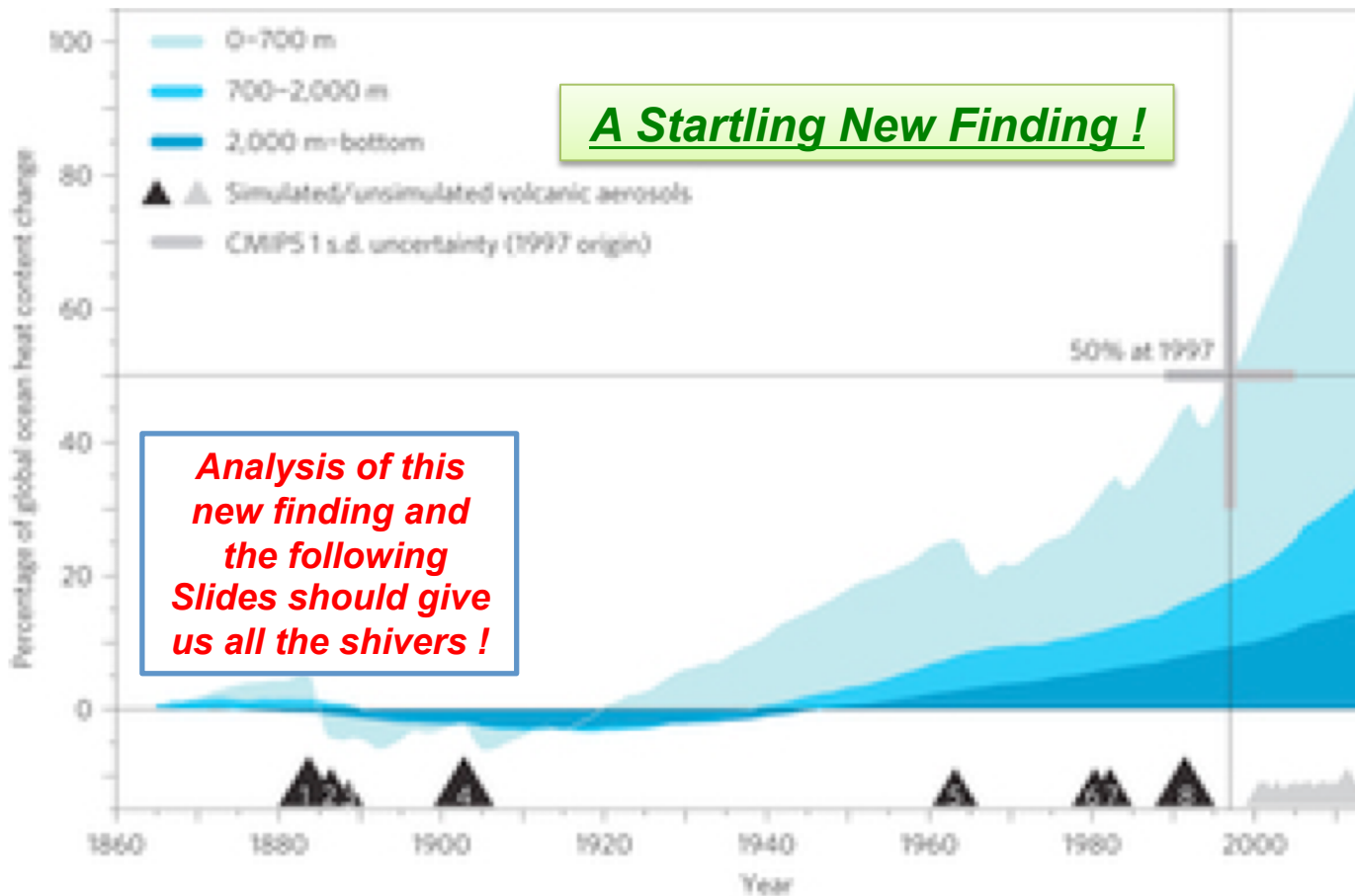


Figure 4

Geckler, PJ, Durack, PJ, Stouffer, RJ, Johnson, GC, Fprest, CE

*This recent NASA photo (Google) shows one of many Antarctic ice caps melting at a much faster rate than hitherto supposed. The new Geckler, et al, data on ocean warming adds urgency to the probability that ice cap melting and speed of climate change may become unstoppable sooner than previously thought possible. **Melting of large sections of the Antarctic ice cap will raise sea levels to catastrophic levels, under the influence of variables shown to be increasing now.***



Science, Universities, and A Great American Challenge

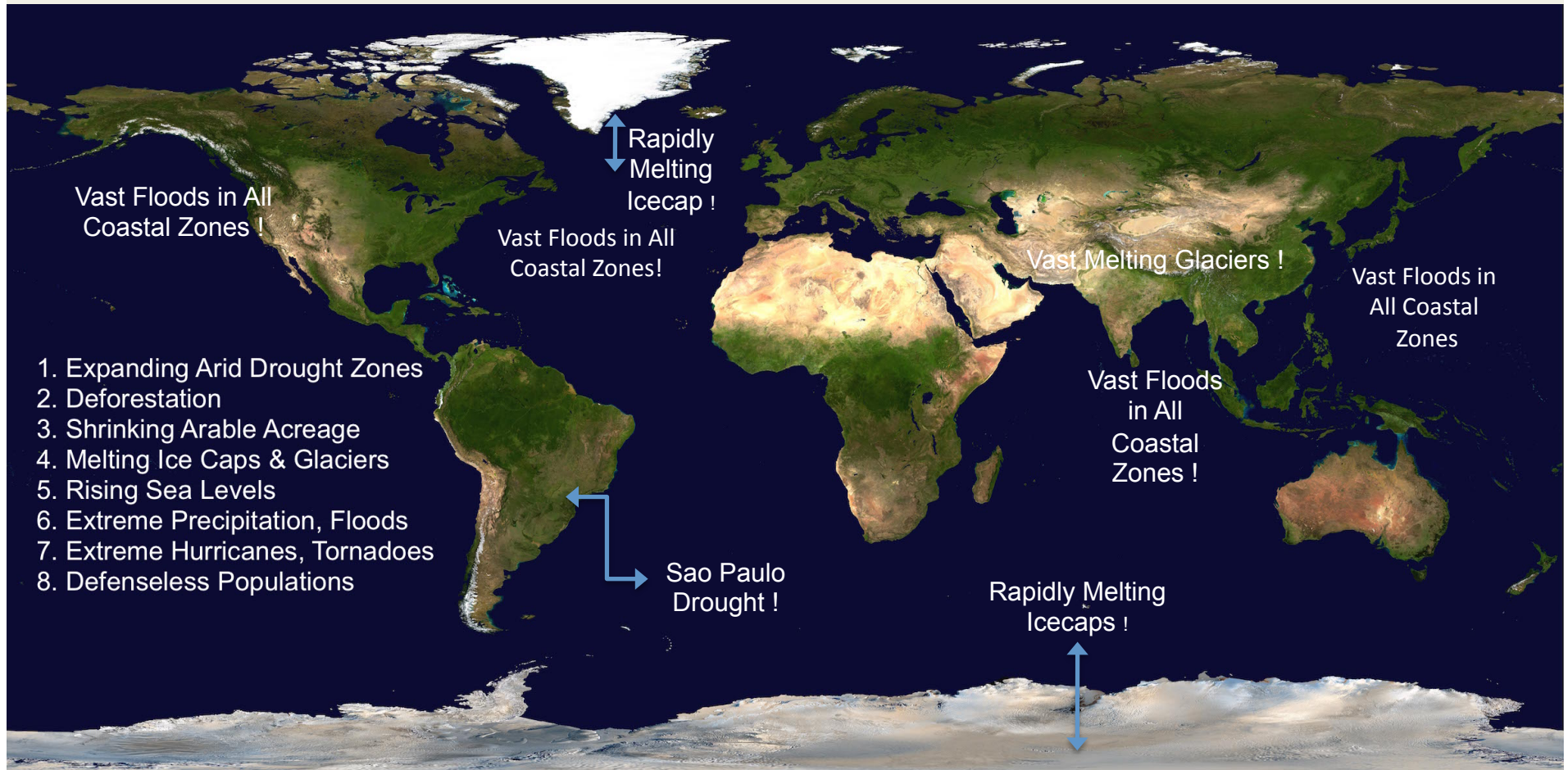
After The Flood in Johnstown, Pennsylvania, May 31, 1889

The flood after collapse of a dam 14 miles upstream of Johnstown was attributed to an unusually heavy rain, combined with the topography of the Conemaugh Valley, a long history of poor maintenance & serious neglect at the dam, and industrial development in the vicinity of the dam at Lake Conemaugh.

What does modern Climate Change predict for other flood-prone American communities now?



The World At Present, With Forecasts for the Future



Consider Links Between Climate and Human Behavior

Note that the most extremely arid zones of Northern Africa and the Middle East are regions of some of the most serious issues of violence, social unrest and governmental instability in the current state of the world.

This is gradually becoming a more widely recognized relationship, between climate and human behavior.

II. Critical Time Lines

Some events in World history are negotiable. Others are not. We live in a period of non-negotiable change.

The next forty years are probably the only time remaining if we hope to avoid unstoppable alterations in world climate systems. The probability of these vast systemic changes are thoroughly established by modern geological & climate knowledge.

These changes are certain to be mainly destructive to social and economic human patterns evolved over many thousands of years of relative climate stability.

If the World continues pumping greenhouse gases into the atmosphere at the present rate

–without making demonstrable progress toward significantly lower emissions,

–global warming will reach an unstoppable tipping point beyond about 2050, after which climates on Planet Earth will spin out of the range of all prior recorded human experience.

Science, Universities, and A Great American Challenge

If the atom bombs had not been dropped on Hiroshima and Nagasaki in August of 1945, the history of World War II would have been very different.

I probably would have been killed or permanently damaged as a combat mortar man in the invasion of Japan.

The mortality rate in all populations due to all causes throughout the Pacific theater of operations probably would have continued at the rate of about one million per month.

But the War would eventually have been won, and history would have gone on—with significant differences—but pretty much as it has.

Climate Change leads to a different ball game.

At present increasing rates of ocean and atmospheric warming–

After about 2050, natural forces now in motion become unstoppable.

The images above show only parts of the story.

With widespread, advancing Climate Change, rising American social discontent, the current vacuum of sensible majority Congressional politics, and the uncontrolled increase of our American gun culture –

Our society cannot expect to avoid the chaos, roaming and raiding militias, social and economic collapse, hyper-militarization, and constant warfare now commonplace in the Mid-East and elsewhere in the world.

Science, Universities, and A Great American Challenge

Followers of any of the Abrahamic cultures (Jewish, Christian, Muslim) would do well to read *Genesis, Chapter 7, Verses 20-23*.

Genesis (Tanakh-Jewish Holy Scriptures)-Jewish Publication Society, 1985

V 20 Fifteen cubits higher did the waters swell, as the mountains were covered.

V 21 And all flesh that stirred on earth perished—birds, cattle, beasts, and all the things that swarmed upon the earth, and all mankind.

V22 All in whose nostrils was the merest breath of life, all that was on dry land, died.

V23 All existence on earth was blotted out—man, cattle, creeping things, and birds of the sky, they were all blotted out from the earth. Only Noah was left, and those with him on the ark.

The extremism of the Noah myth may seem out of touch with contemporary consciousness, but modern science and scholarship caution us not to be entirely dismissive of this legend.

Regions south and east of the Black Sea are among the most seismically sensitive regions on Earth. This is where pre-biblical modern civilizations and societies began. Contemporary geologists find nothing improbable in the possibility that this region experienced a massive series of earthquakes. Such event could have caused monumental floods in the regions of the Black Sea and the Mediterranean that might have wiped out much of the settled life across a very wide swathe of the then-known world.

In those terms, the Noah legend is not materially different than the modern occurrence of massive Climate Change (such as is already occurring in that region) or the catastrophic effects of nuclear destruction. What if Iran and Saudi Arabia were to Nuke each other? If there were any survivors at all, within a few generations they might readily create some equivalent of the Noah story.

Summary (I)

Draft 7 – January 20, 2016

- A. Extensive world wide Climate Change has a greater danger of producing massive disruptions to developed and developing societies than any force other than wide-spread nuclear destruction. *These disruptions would take the form of furnace-like solar heating, catastrophic droughts, famines, raging floods, unquenchable fires, mass migrations, unstoppable rising sea levels, increasing frequency and intensity of tornadoes, and massive storms and blizzards – probably greater than any in recorded history.***
- B. Combined with the continuing impacts of Climate Change, seemingly endless hostilities rising from climate effects have direct and indirect threatening effects on social, economic and political stability. This is like a prescription for chaos in the daily lives of nations and people everywhere—at every socio-economic level.**
- C. There are at least four reasons why modern conflicts, especially in the Mid-East and North Africa, are very different from any previous wars in modern times.**

These facts require continual scrutiny and analysis. They are itemized in an Appendix to this work.

> > > > **MORE** > > >

Take-Home Concept:

Daily life, for those who survive, is likely to change faster in the next 25 years and beyond than at any time in world history.

Summary (II)

Draft 7 – January 20, 2016

D. Finding remedies for the disruptive effects of expanding technologies on employment are a critical necessity in the continuity of economic, political and social stability, especially in industrialized societies.

E. Wise advance planning for these great changes can have greatly beneficial effects to mitigate their worst impacts, among people & nations wise enough to plan for them. Education, science & scholarship can play major roles in this work.

F. Point F is the Fourth Component of this Presentation:

Proposals for bold new agendas to improve prospects for meeting
The Great American Challenge
Now and in the Future

Plan to attend, or send an email request to receive a copy by email attachment:
bzf202@gmail.com

These proposals contain elements seldom, if ever before, included in an academic presentation.

WAKE UP, AMERICA !

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The Future Is Coming

What Climate Change and World Change

REALLY MEAN

For *All* of Us

– OR –

Dancing on the Rim of a White-Hot Volcano

*Can Science, Education, Governments, and the People Preserve Civil Societies
In Our Burning World?*

Part 2 – March 15, 2016

Science, Universities, And A Great American Challenge:

Coping With Climate Change and Environmental Degradation

*We wish to thank Philip Robinson, Cameron Holmes and Zachary Schwaller for their help
In pursuit of these projects.*

This Presentation is Part 2 of a 2-Part Series.

Part 1– **Seeing Real Truths** – was presented in this Seminar
October 20, 2015.

An edited version of Part 1 will become available on the emerging BZF website.

ABSTRACT – Part 1 – October 20, 2015

American and World politicians stand to face the possibilities that some of our smartest scientists may be right about Climate Change?

That's what this presentation seeks to understand and examine: the standoff between—

Authoritative assessments from massive bodies of data that forecast high probabilities of many rapidly approaching and widespread climate catastrophes;

vs.

*Persistent struggles among some of our most powerful political and economic leaders to alter the carbon-based energy economy and business models **as little and as slowly as possible.***

Chaos & Complex Systems Seminar concepts of *simplicity, intricacy, complexity* and *chaos* appear to account for problems that must be overcome if America and the World can solve these problems before it's too late.

Take-Home Concept:

We're never going to contain or resolve American parts of the Climate Crisis until we begin to unwind the tangled complexities in which it is embedded.

About The Authors



Bernard Z. Friedlander



Noah M. Friedlander

Bernard and his grandson, Noah, have worked together since Noah was 9-years old, when Noah taught Grandpa how to use a newly acquired computer which Grandpa did not adequately understand. By that time, Noah had taught himself how to use the *Sketch-Up* computer design program. With *Sketch-Up* he helped Bernard lay out key components of an aviation system which could continuously indicate to pilots the aerial “buoyancy” of an aircraft in flight. When Noah was 11, he and Bernard learned that the engineers of the Municipal Transportation Agency in San Francisco, where Noah is a native, had been struggling to design a pedestrian safety system of Between-Car-Barriers for the two-car Light Rail Vehicles that circulate widely on San Francisco streets. Working together, Bernard and Noah quickly produced detailed diagrams for the flexible, self-adjusting system that was subsequently adopted. This system is now in service on LRVs throughout the City. Copies of those original 2011 prototype diagrams can be seen, upon request.

As Noah’s studies of environmental and other sciences have advanced at the International High School of San Francisco, his contributions have become increasingly valuable to Bernard in his own work at the University of Wisconsin-Madison: on issues of the larger dimensions of the effects of climate change and environmental impacts on societal and governmental stability in the coming years.

Bernard is now Research Professor of Human Development, *Emeritus*, in the Department of Psychology at the University of Hartford in West Hartford, CT, and a regularly contributing current member of the **Chaos and Complex Systems Seminar** in the Department of Physics at the University of Wisconsin-Madison.

His undergraduate major studies at Middlebury College were in English and American Literature and History. At Middlebury, he was Co-Editor of *FRONTIERS*, Middlebury’s literary periodical.

For several years, before entering graduate school to study scientific methods in research on human development, Bernard served as Personal Assistant to F. Ronald Mansbridge, Director of the American Branch of Cambridge University Press.

A record of some of his scholarly research can be found in *Google Scholar*, and his professional profile appears on *LinkedIn*.

Bernard resides in Madison and in Bellevue, WA.

This project, as with all my recent and current efforts, is dedicated to the memory of my two late wives—

Mary Hannah Martin Combs Friedlander

&

Mary Alexandra Gibson Masich Friedlander—

From both of whom I gained more than I could ever adequately repay.

~B Z F~