



# The Way from Smog to Sustainability

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**T**he jump from “smog” to “sustainability” first happens in collective learning; but then perhaps the latter may be wrought out in collective doing as well, by big historians.

January was a cruel month for Beijingers, for they were fed an overdose of dirty air almost daily, twenty-six out of thirty-one days! Reports say PM2.5 (tiny particulate matter used to measure air quality) regularly exceeded 500 whereas above 300 is already considered hazardous and the World Health Organization recommends a daily level of no more than 20. This made it hard for people to breathe, sent the less strong to hospitals, and hit the headlines of leading newspapers in the country, a rare event in recent years. Apparently being caught off guard, the hapless Beijing government advised its citizens to stay indoors and shut windows, smoke less, wash themselves more often, and eat light meals. The lingering haze has even earned Beijing a nickname as “Greyjing” and given rise to a widely circulated online parody titled “Beijing! Beijing!” based on a pop song of the same name: “Who is traveling in the fog and who is crying in the fog? Who is struggling in the fog and who is suffocating in the fog?”

The “fog” in the parody, to be sure, was not exactly accurate. It was smog: a combination more of the human-induced smoke and less the



**In this issue of the IBHA Members' Newsletter, we feature:**

**an essay on sustainability in China by [Sun Yue](#) (pp. 1- 4),**

**two book reviews by [Cynthia Brown](#) (p. 5),**

**notices of Metanexus' One Day Universe ( p. 6), a new book by [Akop P. Nazaretyan](#) (pp. 7-9), a collage of images presented by Leslye Allen of a Grand Valley State University Big History trip (pp. 10-20 ), and the Graduate Student Big History Research Conference (p. 21).**



# BEIJING 2013





naturally-formed fog, a fact at once recognized by leading experts and government officials and the common rank and file. More specifically, as the People's Daily says, coal-burning, vehicular exhaust, industrial fumes, urban dust and bad weather all contributed to making the air stale and polluted. In fact, the smog was not confined to Beijing, but engulfed an area of over one million square kilometers in central and eastern China. Confronting such all-affecting hazards, the people naturally turned to the government, while all the government could do was to shut down a number of factories and limit road vehicles, both looking upward toward heaven for breezes to clear away the smog.

Fortunately, the god-send came on February 1 and performed its function, perfunctorily and temporarily for sure. For everybody knows that the root problem remains unsolved: to keep the economy going, coal-burning cannot be completely gotten rid of in a short while, the number of cars will only rise, industries will resume or even pick up speed while the weather has been for millennia known for its changeability, not always coming as a timely rescue. And the Chinese government is well aware that after a three-decade-long rapid economic growth, China is certain to confront a number of seemingly insurmountable obstacles like the smog, something that has to come and has to be overcome to realize sustainable growth.

With this understanding, it must be pointed out that China, as a late-coming industrializing country, has benefited a lot from the lessons the world has learned over the past century, i.e., simply put, uncontrolled industrialization backfires! That is why institutionally, as early as 1972, during the Great Cultural Revolution, the Chinese government had already set up an Environmental Team to tackle water-and-other-related issues; in time, this team grew quickly to become the Environmental Protection Leadership Group (1973), the ministry-level State Environmental Protection Administration (1998), and the full-fledged Ministry of Environmental Protection (2008) directly under the State Council. [Note: those interested in learning more about China's environmental situations and aspirations may turn to its official website at <http://english.mep.gov.cn/#>. The MEP issues an annual "Report on the State of the Environment of China".] While there is not yet a Ministry of Sustainable Development, the whole Chinese government is consciously and

conscientiously bent on sustainable development, as is craved for by the Chinese people and endorsed by the Chinese culture as well.

Over the years, the Chinese government has dispatched delegates to attend all major environment-related international conferences, Chinese scholars have been earnest to address some of the key issues affecting the environment, often in close collaboration with their foreign counterparts, and environmental studies programs have mushroomed in a number of key universities throughout the country. In 1994 the State Council issued China's Agenda 21, a document aimed at guiding China's sustainable development in the 21st century, as an echo to the resolution of the U.N. Conference on Environment and Development in 1992, showcasing a vibrant contemporary collective learning at work. Currently, the Chinese understanding of sustainable development, based on the guiding "scientific outlook on development", is as follows:

The scientific outlook on development takes development as its top priority, having people-first as its core value, comprehensive, coordinated and sustainable development as its basic requirement, and overall considerations as its fundamental approach. It tries to integrate urban and rural development, regional developments, economic and social development, harmony between man and nature,



*Beijing smog; picture by Barry Rodrigue*

domestic development and opening to the outside world. It aims to realize, sustain and develop the fundamental interests of the overwhelming majority of the people, having the people as the main subject of all government undertakings, giving full play to their creativity, protecting their rights and interests in an effort to promote comprehensive development and social progress. (See The People's Republic of China National Report on Sustainable Development, accessible at <http://www.china-un.org/eng/zt/sdrengr/>, with minor modifications.)

Sustainable development, as an article of faith and understanding, has even found its way into the Constitution of the People's Republic of China (1982 onward): "Development must use natural resources in a manner that takes future generations into consideration. China's goal is to restructure the economy to one of low consumption and low pollution, while addressing the needs of the world's largest population, much of which is uneducated, poor, and aging." The key phrases here are "comprehensive, coordinated and sustainable development" and "overall considerations", a notion that resonates with the traditional Chinese concept of "harmony between heaven and humanity" and the big history concern of uniting "natural history and human history". That is why scholars in China almost never skip referring to the topic when talking about sustainable development and have been able to

envision, on the basis of how human societies see and deal with man-nature relations, a new "environmental civilization" as an inevitable successor to Paleolithic, agricultural and industrial civilizations.

It would be unwise for one to use a single incident, like the smog mentioned above, to judge China's overall environmental situation, yet the apparent discrepancy between noble thoughts, towering institutions, nice-sounding policies and the reality should be enough to alert the Chinese government and people about recurrent environmental degradation and that something must be done to avert the anthropocenic disasters that are now coming on. In the words of a Chinese writer, "if the Mayan prophesies of doom did not materialize, then the blackening haze has sounded the alarm that we are not so far from it either, i.e., if nothing is done to alleviate the situation."

Big history is here to pinpoint the problem, and not to point fingers. It is hoped that Big Historians, with their larger vision and earnestness for a cosmopolitan humanity, might help to ease the way from collective learning to collective doing as well.



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*Smog over Great Wall;  
picture by  
Lowell Gustafson*



## Two Book Reviews

by Cynthia Brown

Dominican University of California

Big historians have sometimes been guilty of minimizing the contributions of geologists to the construction of our narrative. Two recent books by **Jan Zalasiewicz** will go a long way to helping us overcome this deficiency.

Zalasiewicz is a field geologist, paleontologist, and stratigrapher at the University of Leicester in central England. His research focuses on fossil ecosystems and environments in the Paleozoic and the Holocene. He proved himself a gifted popular science writer with his book, *The Earth After Us* (Oxford University Press, 2008), in which he imagined what alien geologists (or hyper evolved rats) could find of humans in the fossil record a 100 million years from now.

Subsequently, Zalasiewicz has written two more books addressing a wide audience: *The Planet in a Pebble* (Oxford University Press, 2010) and *The Goldilocks Planet* (Oxford University Press, 2012) with **Mark Williams**. In *Planet in a Pebble* Zalasiewicz pulls off a book-length little big history, telling the story of a pebble of grey slate with a thin white line from a Welch beach or river gravel. In his first three chapters Zalasiewicz tells of the formation of the universe and of Earth up to about 600 million years ago. Then he focuses on the pebble forming underwater in the southern hemisphere, moving upwards through the Earth's crust as the crust moves northeastward. Eventually Gondwana (now Africa, South America, Australia, India) hit Avalonia (now under southwest Great Britain and the eastern coast of North America) to form mountains and transform the mud in the seabed into slate, which rose into mountains and then broke down into the washed pebble.

Zalasiewicz's final chapter provides a detailed description of Earth's future, with "a kind of mineral diaspora from our Sun's final outburst [and] that cosmic dust, with a few of our pebble's atoms in it. . . might be swept up into the birth of a new star system" (p. 219). Since no geologic timescale is

included in this book, as there is in *The Goldilocks Planet*, it seems advisable to use both books together.

In *The Goldilocks Planet* Zalasiewicz had assembled a coherent account of climate change over the whole of Earth's history. This is an invaluable reference for teaching Big History; one can find out what the climate was at any period of Earth's history. The story is more remarkable than any children's story.

This book's title refers to the amazing fact that, since its initial cooling, our planet has managed to stay within the bounds of temperature neither too hot nor too cold for life---the "just right" conditions that Goldilocks found in the possessions of Baby Bear in the children's story. Zalasiewicz can describe these conditions, but he cannot explain them; that's the mystery, which he acknowledges, at the heart of this book.

Over the past million years Earth's climate has been especially turbulent, with dramatic climate changes in a cycle of about every 100,000 years. The 10,000 warm years that humans have enjoyed since the last ice age are part of that cycle. But Zalasiewicz is convinced that human influence on the biosphere has produced an unexpected geologic epoch beginning about 200 years ago, the Anthropocene. He concludes with a clear-headed discussion of the current climate situation. He believes that the warming of 1 degree F. (0.6 degrees C.) since 1980 is much more likely than not caused by humans and is likely to continue for decades, centuries, and millennia. As he puts it, "we are vigorously rocking a boat that has shown a marked tendency to capsize" (p. 258). He expects that carbon dioxide levels will reach between 500-1000 parts per milligram in the next century or two and that it will take roughly 200,000 years for the atmosphere to recover from its human disturbance (p. 258-9).

This pair of books is one that both instructors and students (maybe not freshmen) will find a great pleasure. Both books impart complicated information in an engaging, accessible manner, and they intersect with and reinforce each other.



# IBHA One Day Universe 2013.09.21

By William Grassie

While IBHA members might wish that universities, colleges, and high schools would all start teaching courses on Big History, there remain significant societal, institutional, and intellectual obstacles to widespread adoption of this innovative curriculum.

Humanity has made a lot of progress through specialization and division of labor. Educators are trained and rewarded for being specialists, not Big History generalists. Professors and teachers today are also mostly overwhelmed with the exponential growth in specialized knowledge, new educational policies, the latest pedagogical fads, and a new generation of hyper-distracted students. And while these are all the more reasons to promote Big History, just because we build it, does not mean that they will come.

So why not teach Big History in a single day? That is the idea behind “One Day Universe: Visualizing Big History.” The inaugural event will be held on Saturday, September 21, 2013 at Liberty Science Center on the New Jersey side of New York Harbor.

One Day Universe is a 13.7-hour marathon celebration of science from the Big Bang to the Anthropocene. It will involve over 20 speakers presenting Big History to an audience of 700. The day will be organized in 5 sessions — Cosmos, Microcosmos, Earth, Humans, and the Anthropocene. The program will be interspersed with music, special exhibitions, and

several Little Big Histories. A number of ancillary projects are also planned in cooperation with corporate sponsors. One Day Universe aspires to replicate the rigor of TED with the energy of SXSW in the service of Big History.

IBHA members are invited to register for this inaugural event with an exclusive \$200 discount before March 15, when One Day Universe will be officially launched. If you can’t attend in person, we invite you to register for the live stream of the event and watch online. Even better, you can host your own Universe Party in your home, school, library, church, or community center. We also invite IBHA members to help publicize the event by liking, linking, tweeting, and helping spread the word.

And it is not too early to start planning your own One Day Universe on September 20, 2014. Every college and university has the in-house expertise to host a One Day Universe, but we rarely put it all together for our students or ourselves as such. The strategy is to replicate One Day Universe as an annual celebration of Big History, the discovery of which is perhaps the most significant accomplishment of human civilization.

One Day Universe is produced by Metanexus in partnership with Liberty Science Center. For more information, go to [OneDayUniverse.org](http://OneDayUniverse.org).

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# Nonlinear Futures:

## Mega-History, Complexity Theory, Anthropology & Psychology for Global Forecasting

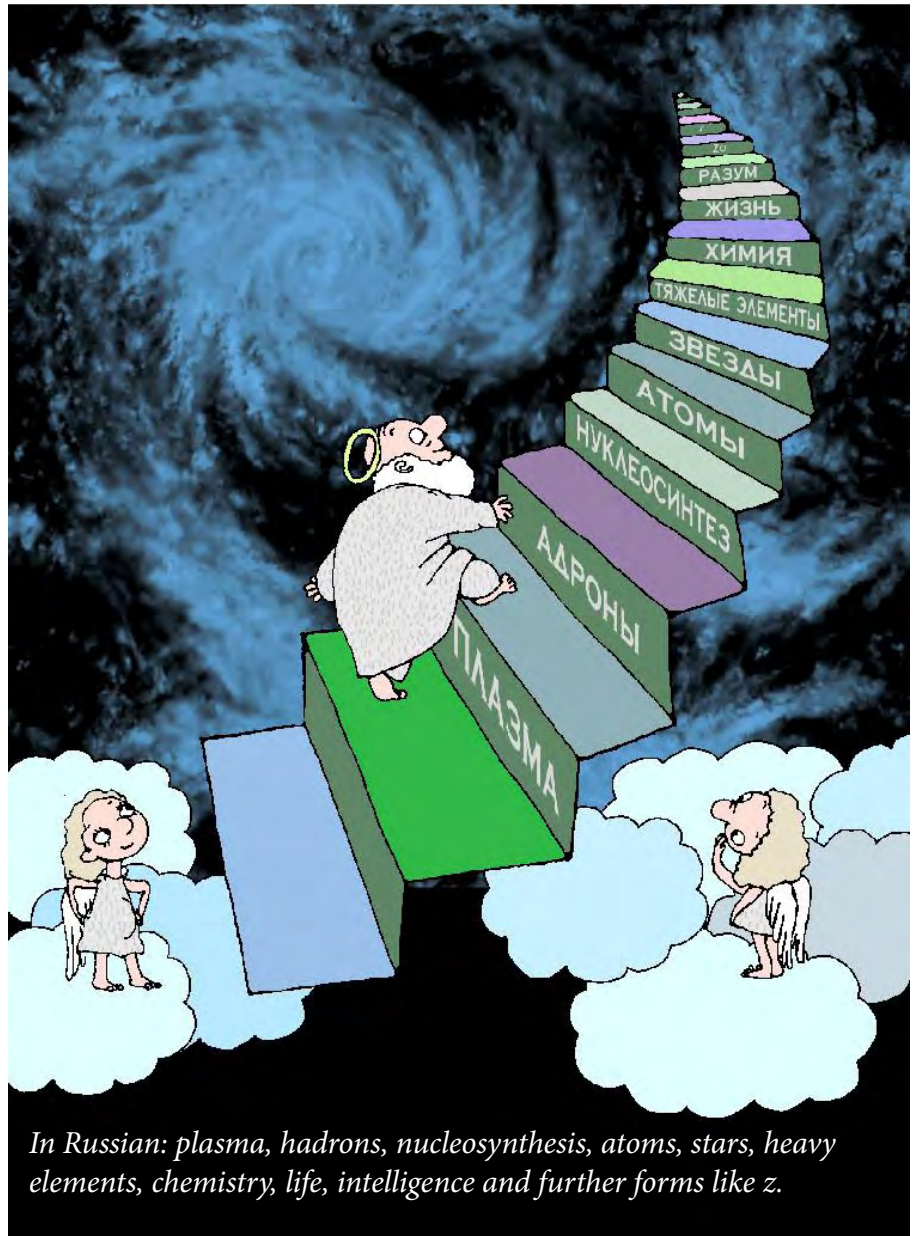
by Akop P. Nazaretyan

Moscow: MBA, 2013

A series of independent calculations undertaken by various authors show that nature and then human society have been developing in accordance with general vectors and that this development has been successively accelerating for billions of years: the time between phase transitions in biospheric, pre-social and social evolution have been decreasing in a logarithmic fashion. Having extrapolated the hyperbolic curve, the researchers found that the speed of global transformations will reach infinity and the interval between the phase transitions will reach zero by the middle of the 21st century.

Does this imply that an unprecedented turning point in the development of humanity, the biosphere and perhaps the cosmos is expected in the observable future? What alternative scenarios are there? Is an irreversible collapse or a crucial change of vectors to be expected? How might the prospects of world civilization depend on our thoughts and activities?

In order to discuss this situation, the author uses the scholarship developed by Mega-history (synonymous with Big, or Universal History), along with modern conceptions of astrophysics and microphysics, complexity theory, cultural anthropology, psychology and heuristics. He concludes that after having become a planetary factor, intellectual activity is apt to become a factor of cosmological significance. What might become a decisive obstacle to such development are not the limits of the mind's ability to control mass and energy but its suicidal inability to cope with its own growing power. The book explores new perspective in worldviews and the meanings of life, which might promote the sustainability of global civilization under rapidly changing conditions.



The volume is 23 sheets (920.000 characters with blanks); 4 formulas, 5 graphs.

The book is expected in paper in March 2013.

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An afterword on my “historical optimism”



# Big History's Big Day Out in Chicago!

Craig Benjamin, Associate Professor of History in the Meijer Honors College at Grand Valley State University, and Treasurer of the IBHA, took 50 students from his two first-year Honors interdisciplinary classes – Big History and Focus on East Asia on a fantastic day-trip to Chicago. Accompanied by IBHA Advisory Council Chair, Pamela Benjamin and IBHA Office Coordinator, Leslye Allen, Craig and the students visited the [Field Museum of Natural History](#) and the [Art Institute of Chicago](#), and Chicago's [Chintatown](#) for an incredibly delicious, authentic East Asian banquet.



The day began at the [Field Museum](#) where the students were able to tour the [Evolving Planet](#) and take an awe-inspiring journey through 4 billion years of life on Earth!







The exhibit tells the compelling story of evolution – “*the single process that connects everything that’s ever lived on Earth.*” The students came face-to face with the largest creatures to ever walk Earth at *The Genius Hall of Dinosaurs* which contains specimens from every major dinosaur group, including a *Cryolophosaurus*, one of the first dinosaurs found in Antarctica and *Rapetosaurus krausei*, an 18-foot skeleton of a

juvenile *sauropod*, found by Field Museum scientists on expedition in Madagascar -- the only one of its kind on exhibit in the world!



This is the world-famous fossil known as “Sue” – the largest, best-preserved, and most complete *Tyrannosaurus Rex* ever found! She measures 42 feet long from snout to tail and 13 feet tall at the hip.



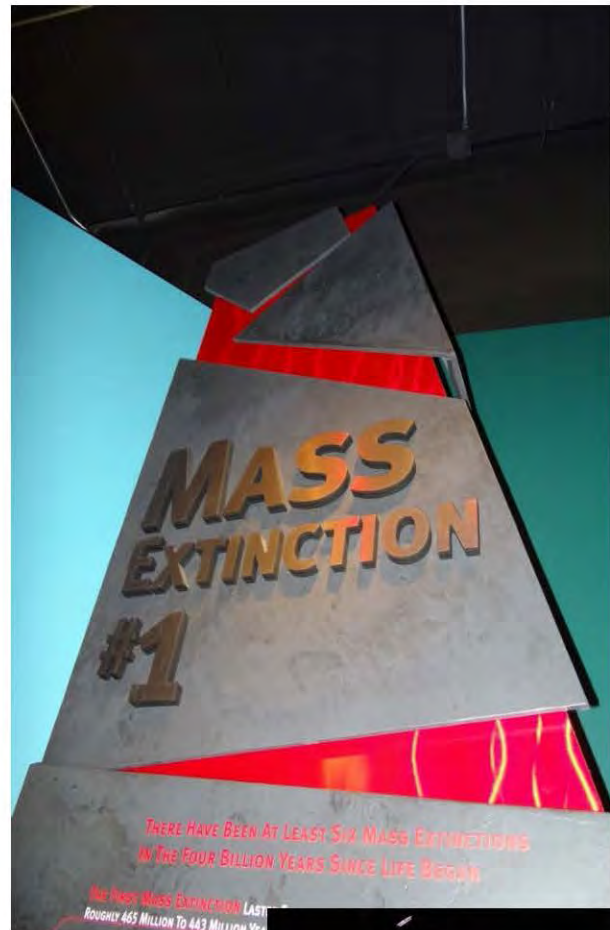
Take a walk through the [Highlights of the Exhibition](#) to view what the museum scientists are still learning about the past, present, and future life on Earth.







Trilobites





**Evaluating Evolution's Importance...** Biological evolution is the idea that populations experience small genetic changes from one generation to the next. Over time and through the process of **natural selection**, these small changes can add up to big changes overall, including the emergence of a new species.



A note about the above photo – Leslye’s great, great, grandfather, Henry K. Coale, was a world renowned Ornithologist who started the bird exhibit at the Field Museum. One of his many contributions is the Trumpeter Swan (*Olor buccinator*) shown in the exhibit above. Through research, it was found that this species was here in great numbers in pre-historic time, and their bones have been found in the villages of the old Indians, who used the leg bones for making implements. You can read his article here: [Henry K. Coale](#).

**Life evolves...** Everything on Earth that has ever lived is connected through, and is the result of, evolution. It’s a process that’s been happening since the first tiny life forms appeared some four billion years ago.







Essentially every living thing is connected through a single process—evolution... It's the only scientifically accepted and strongly corroborated theory we have to explain the amazing diversity of life on Earth today and throughout Earth's history.







Did you know that Chicago's [Chinatown](#) is the second largest Chinatown in the U.S. after New York? It is also the business and cultural center for Chinese in the Midwest.

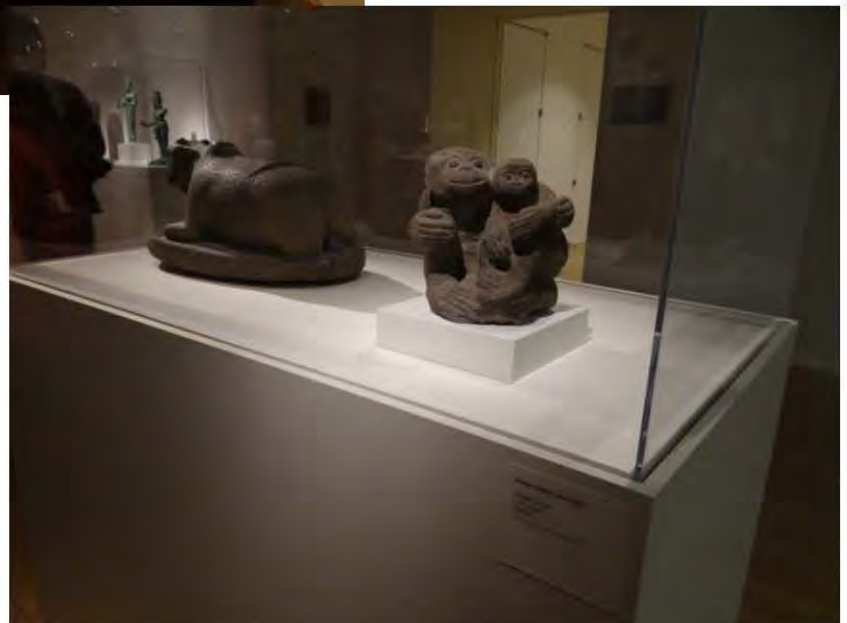






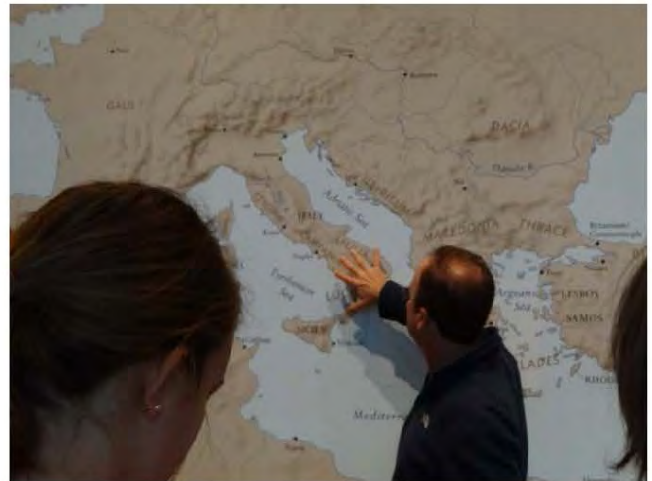
After lunch, the excursion continued at Chicago's [Art Institute](#), which includes significant works from the Era of Agrarian Civilizations, including nearly 5,000 objects from Near Eastern, Byzantine, Egyptian, Etruscan, Greek, and Roman cultures, and one of the finest collections of Chinese dynastic artifacts in the world.

The outstanding art collection of the Department of Ancient and Byzantine Art, and the comprehensive East Asian collection, each span some 5,000 years of history!





Professor Benjamin offering a big history of the ancient Mediterranean region to GVSU students – 10,000 years of history in 3 minutes!





This copper “Statuette of a Striding Figure” is just one example of the incredible artifacts on display at the [Art Institute](#). It is from the Proto-Elamite or Mesopotamian Era and dates 3,000/2,800 B.C.







I hope to see more  
Big Historians in Chicago soon!  
"Sue"





# STUDENTS' BIG HISTORY RESEARCH CONFERENCE



## FIRST STUDENTS' BIG HISTORY RESEARCH CONFERENCE

June 13-15, 2013, University of Amsterdam, The Netherlands

This conference will bring together young big history researchers to exchange ideas and discuss the career possibilities that are currently available as well as those that the future might bring. Supervisors, other interested scholars and potential sponsors are more than welcome to come and support the future generation of big historians.

The conference will start on Thursday June 13. The morning sessions of June 14 and 15 are reserved for presentations, while the afternoon sessions will be devoted to discussions about two relevant themes: energy and big history research challenges. The conference will be concluded with a keynote speech by Fred Spier.

Attendance through Skype will be possible.

We invite you to submit an abstract of your paper before February 28 to Esther Quaedackers (E.Quaedackers@uva.nl). For more information, please don't hesitate to contact Esther Quaedackers or Melanie During (Melanie.During@student.uva.nl) or check our Facebook page (<http://www.facebook.com/IBHASTudentsConference>).

We very much hope that you will join us for the first students' big history research conference to be held at the University of Amsterdam on June 13-15, 2013!



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