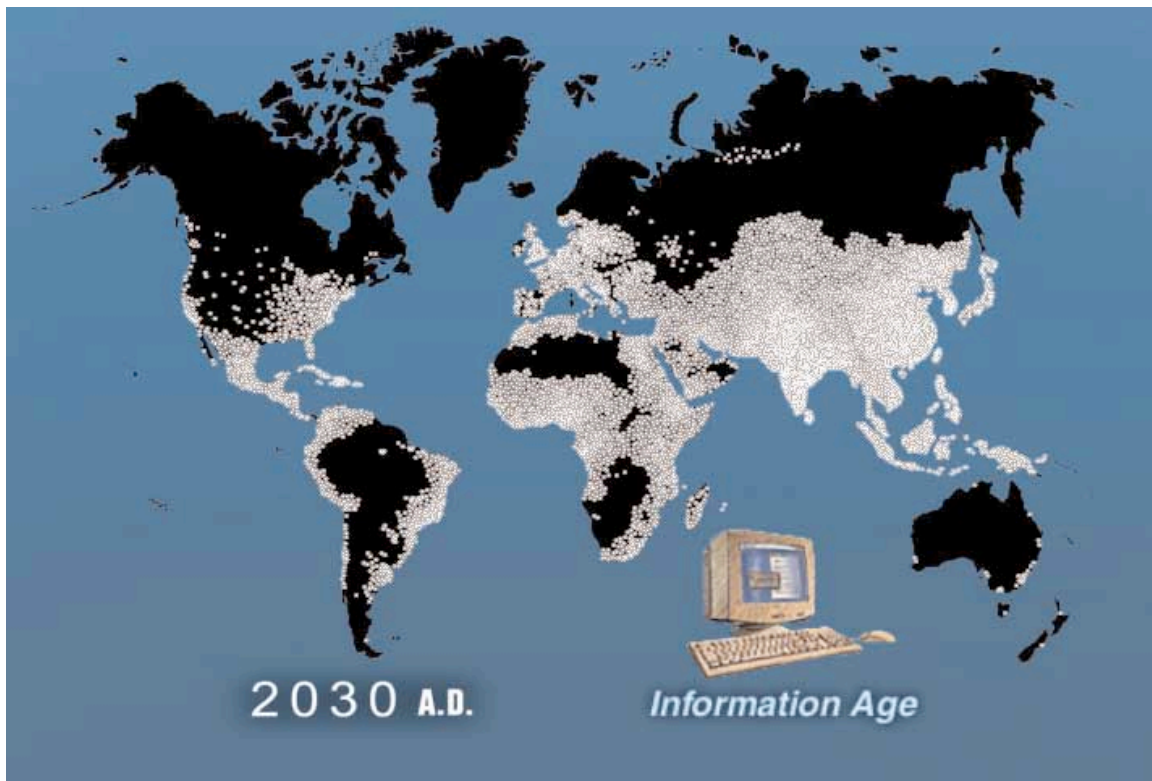# Brief Bio and (PR)^2: Problems & Pitches – Rants & Raves by *Stephen Uzzo*
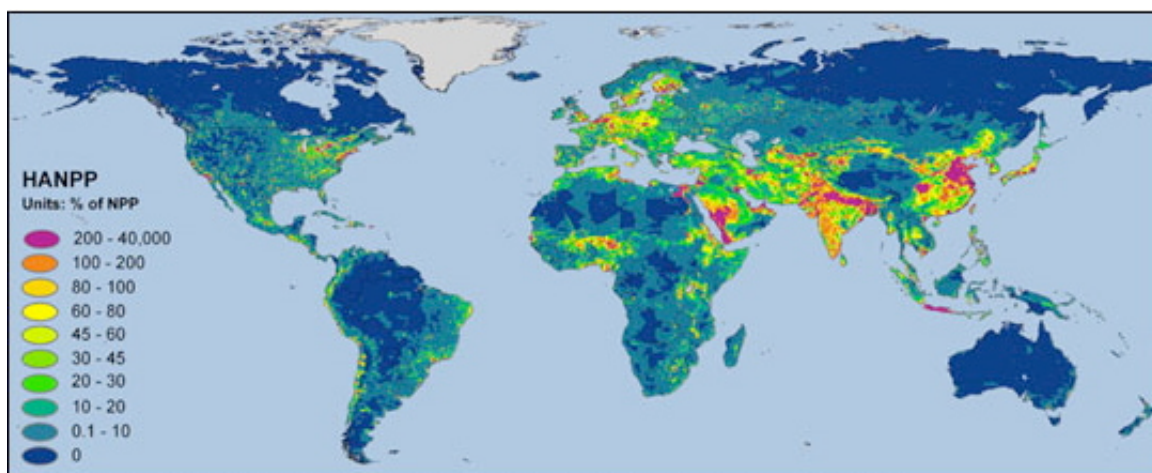
Current research interests include network science and ecosystems ecology, scientific visualization, cybernetics and epistemology. As Director, Technology for the New York Hall of Science, he worked on the development team for "Connections: the Nature of Networks" a public exhibition on network science and wireless distance learning networks. He was also the co-organizer and host for the 2007 International Conference and Workshop on Network Science. Steve currently teaches science, math and technology education for the New York Institute of Technology. Previously, he worked for the NYIT Computer Graphics, Video Production and Interactive Technologies research laboratories, developing computer graphic and digital video compression systems, robotic systems, and distance learning programs. Other projects he worked on include launching MTV, determining best practices for broadcasting the Summer Olympic Games in Barcelona, Spain, and one of the first all digital television transmissions via satellite. He has also led development of numerous large-scale media production and satellite network engineering systems. As part of a team of scientists and engineers at Princeton's Space Studies Institute, Steve worked to develop and test lunar teleoperation simulators. His work on various projects important to conservation includes ecosystems studies that were instrumental in blocking offshore oil drilling in New York waters and a cross sound bridge in Oyster Bay, as well as development of cleanup planning for superfund sites. He has worked on preservation and open space projects on Long Island and the San Francisco Bay Peninsula.

- Network Theory and the Environment: Understanding Human Connections to Nature, 2006 (Doctoral Thesis)
- The Man Who Spoke to Stones (Chapter in anthology "Terra Nova – Writing the Future: Progress and Evolution"), Massachusetts Institute of Technology Press. 2004
- Imaging in Extreme Environments: Proceedings, 2nd International Design for Extreme Environments Assembly, 1993, McGill University, Centre for Northern Studies, Montreal, PQ.
- Discrepancies in Color Reproduction Technology: Computer Output Technology Course Notes (Course #1) Association for Computing Machinery, SIGGRAPH Conference, 1989, Boston, Mass.

2030 A.D.   Information Age

- http://www.nyscience.org/uzzo
- links to data or software you serve (if applicable).

http://www.nyscience.org/teacherconnections/exhibitions/?id=9&&mainId=4&subId=17

HANPP
Units: % of NPP

- 200 - 40,000
- 100 - 200
- 80 - 100
- 60 - 80
- 45 - 60
- 30 - 45
- 20 - 30
- 10 - 20
- 0.1 - 10
- 0

Human Appropriation of Net Primary Production (percent of local NPP)

General Questions

1) What is (are) your main interest(s) in attending the workshop?

> At the New York Hall of Science, we strive to engage adult and young visitors alike in complex science topics that will impact their lives. One important aspect of twenty-first century science we need to bring to our audience is how scientists analyze large and interdisciplinary data sets and use these data to understand complex problems. As an outcome of this workshop, we hope to develop experiences which will bring data discovery to life for visitors and provide them with an understanding of how complex science research is accomplished using tools for discovery and innovation

2) What information/knowledge management needs do you have?
Explain your 'dream tool' for scientific discovery and innovation.

> The dream tool is a way for informal and formal science learners to access manipulate and visualize large data sets so they can have a better grasp of complex science and understand the scope of contemporary scientific discovery. Ideally the experience should engage the visitor but also be flexible enough to accommodate a variety of data sets, the ability to compare date sets and the ability to visualize dynamic data sets.

3) What is the most insightful visualization of static or dynamic phenomena you know?

> Most Compelling Spatial Representation
> See attached HANPP_1982-98%.jpg
> This image represents Human appropriation of Net Primary Production. Percent of local NPP. (NASA Image, from Marc Imhoff and Lahouari Bounoua at Goddard Space Flight Center.)

> Most compelling dynamic representation:
> See attached WorldPop2030.jpg screen shot from animation
> More info about this at
> http://www.populationeducation.org/index.php?option=com_content&task=view&id=175&Itemid=10
> As the years roll by on a digital clock from 1 A.D. to 2030, dots light up on an illustrated map to represent millions of people added to the population.

4) What would you like to learn / achieve at the workshop?

> I would like to see advancements in the ability to create compelling sensory experiences which effectively communicate important and revolutionary science concepts such as metagenomics, ecosystems ecology, molecular evolution and other complex network ideas.