



Inter-American Institute for Global Change Research



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**Science Program Coordinator: Dr. Joan L. Aron, Ph.D.**

Science Communication Studies  
Columbia, Maryland, USA



**Biographical Sketch**

Dr. Aron is assisting the Pan American Health Organization (PAHO), regional office of the World Health Organization for the Americas, in developing a project to integrate geospatial data in the health, agriculture, and environment sectors for use in promoting and sustaining food and nutrition security in Central America. Dr. Aron is an advisor to the Health Portal, which is part of the Digital Universe in development by ManyOne and its partners [<http://www.manyone.net/homesite/tomorrow>]. Dr. Aron is also working on infectious disease models with the U.S. Naval Research Laboratory Nonlinear Dynamical Systems Section and an inter-American collaborative that formed the Climate and Health Information Exchange (CHIEX) [<http://chiex.net>], with a particular emphasis on dengue transmission.

Dr. Aron is the lead editor of *Ecosystem Change and Public Health: A Global Perspective*, the first graduate-level textbook on this topic. This text, published by the Johns Hopkins University Press, has been deemed outstanding by NASA's Earth Science Education Product Peer Review and meets all the criteria for high quality in the NSF Digital Library for Earth System Education (DLESE). She is working with the Universities Space Research Association (USRA) on Earth System Science Education for the 21st Century (ESSE21), a program funded by NASA to support the development of courses, curricula, and degree programs in earth system science in U.S. colleges and universities. She is the Science Program Coordinator for the 2005 Inter-American Training Institute on Climate and Health in the Americas [<http://www.iai.int>] and previously coordinated the first regional PAHO/WHO conference and workshop on climate and health effects in the Caribbean.

Dr. Aron is the Executive Director of the Maryland Mathematics & Science Coalition (MMSC), part of a National Alliance of State Science & Mathematics Coalitions (NASSMC) working to improve mathematics, science, and technology education. She has spurred the formation of a Howard County, Maryland business-education partnership that addresses systemic reform in science, technology, engineering, and mathematics (STEM) education with the objective of applying NASSMC/MMSC coalition ideas for Howard County's benefit and as a demonstration for state-level planning.

Dr. Aron is President and Founder of Science Communication Studies, a nonprofit research and education organization in Columbia, Maryland, formed for cross-disciplinary communication of science. Its focus areas are (1) environmental issues in public health, (2) mathematical modeling, especially the dynamics and control of infectious diseases linking information from multiple disciplines, and (3) advances in mathematics, science, and technology education. She is also on the associate faculty of the Dept. of Epidemiology in the Johns Hopkins Bloomberg School of Public Health. She received her B.A. in Applied Mathematics from Harvard, Diploma in Mathematical Statistics from Cambridge, Ph.D. in (Mathematical) Biology from Princeton and M.Sc. in Information Technology Management from Johns Hopkins.

## Recent Publications and Presentations

- Aron JL. A Regional Project for Modeling Dengue in Latin America and the Caribbean. Ecological Modeling for NASA Applied Sciences Workshop, Asilomar Conference Center, Pacific Grove, California, Mar. 30 – Apr. 1, 2005
- Aron JL. Public health impacts: selected earth system science applications in the Western hemisphere. In: Earth Science Findings with Foreign Policy Implications (Kelmelis JA, ed.), U.S. Geological Survey (in press).
- Aron JL. Mathematical modeling: the dynamics of infection. In: Infectious Disease Epidemiology: Theory and Practice (Nelson KE, Williams CM, Graham NMH, eds.), Aspen Publishers, Gaithersburg, Maryland, Chapter 6 [revision in preparation].
- Kim M-Y, Roy R, Aron JL, Carr TW, Schwartz IB. Scaling behavior of laser population dynamics with time-delayed coupling: theory and experiment. Phys Rev Lett 94, 088101 (2005).
- Aron JL. Using Space Technology and GIS for Linking Food/Nutrition Networks and Public Health Networks in Mesoamerica. National Library of Medicine, Bethesda, Maryland, Feb. 17, 2005.
- Aron JL. Diversity of Approaches to Structuring University-Based Earth System Science Education. American Geophysical Union Fall Meeting, San Francisco, California, Dec. 13 – 17, 2004.
- Aron JL. More Engagement of Stakeholders Needed to Sustain Earth System Science Education. Earth Science Education Community Meeting. Asilomar Conference Grounds, Pacific Grove, California, Nov. 1 – 4, 2004.
- Aron JL. Public Health Impacts: Selected Earth System Science Applications in the Western Hemisphere. Annual Meeting of Earth System Science Education for the 21<sup>st</sup> Century, Monterey, California, 28-30 June 2004 / Workshop on Earth Science Findings with Foreign Policy Implications, U.S. Department of State, Arlington, Virginia, 28-29 June 2004.
- Aron JL, Corvalán CF, Philippeaux H, eds. Climate Variability and Change and their Health Effects in the Caribbean: Information for Adaptation Planning in the Health Sector. Conference May 21-22, 2002, Workshop May 23-25, 2002, St. Philip, Barbados, West Indies. World Health Organization, Geneva. ISBN 92 4 159071 8 (English) (2003)
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- Aron JL. Health and the Environment. ESSE21 College and University Earth System Science Education for the 21st Century, Baltimore, MD, June 11-13, 2003.
- Aron JL. Small Island Developing States: Climate and Health Effects. In: Session on Impact of Climate Change in Developing Countries, Proceedings of the Earth Technologies Forum, Washington DC, April 22-24, 2003.
- Aron JL. Book Review. *Under the Weather: Climate, Ecosystems, and Infectious Disease*. Committee on Climate, Ecosystems, Infectious Disease, and Human Health, Board on Atmospheric Sciences and Climate, National Research Council. Bull. Amer. Meteorol. Soc. 83 (12): 1845-1847 (2002).
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- Aron JL. The Benefits of a Notification Process in Addressing the Worsening Computer Virus Problem. DIMACS Working Group Meeting on Analogies between Computer Viruses and Biological Viruses, Rutgers University, June 10-13, 2002.
- Ventosilla P, Huarcaya E, Chinga E, Leon F, Palacios AM, Gutierrez P, Vidal S, Aron J. Influence of El Niño event on the transmission of malaria in Luciano Castillo y Colonna (Piura, Peru). (poster, Conference on Climate Variability and Change and their Health Effects in the Caribbean, Barbados, May 21-22, 2002).

- Aron JL. Limits of Predictability: How Can We Use Models of Ecosystems and Public Health? Inaugural Speaker, Lecture Series on Mathematical Problems in Industry or Science, Towson University Applied Mathematics Laboratory, April 25, 2002.
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