



Susanne Sokolow

Senior Research Scientist - Basic Life

Stanford Woods Institute for the Environment

 Curriculum Vitae available Online

Bio

BIO

I am a disease ecologist and veterinarian at Stanford University's Hopkins Marine Station and an Associate Fellow at Stanford's Center for Innovation in Global Health.

I am interested in environmental drivers of infectious disease and creative solutions to protect the health of people and the planet. For example, I am working on: 1) biological control of schistosomiasis by restoring a native river prawn that preys on the snail intermediate host, 2) models of disease transmission and how things like connectivity and environmental transmission affect dynamics and control, and 3) designing ecological solutions to disease that mutually benefit human health and the environment.

As Executive Director of Stanford's new Program for Disease Ecology, Health and the Environment, I am helping to build a growing interdisciplinary community at Stanford and beyond interested in discovering and promoting ecological solutions to disease that lead to improved human health and a more sustainable use of the natural environment. As part of this new research program, I founded The Upstream Alliance: a research initiative joining partners across the globe for ecological solutions to reduce the parasitic disease: schistosomiasis, which affects more than 250 million people worldwide.

ACADEMIC APPOINTMENTS

- Senior Research Scientist, Stanford Woods Institute for the Environment

ADMINISTRATIVE APPOINTMENTS

- Associate Fellow, Center for Innovation in Global Health, (2015- present)

PROFESSIONAL EDUCATION

- PhD, University of California Davis , Disease ecology (2008)
- DVM, University of California Davis , Clinical veterinary medicine (2003)

Publications

PUBLICATIONS

- **Aquatic macrophytes and macroinvertebrate predators affect densities of snail hosts and local production of schistosome cercariae that cause human schistosomiasis.** *PLoS neglected tropical diseases*
Haggerty, C. J., Bakhoun, S., Civitello, D. J., De Leo, G. A., Jouanard, N., Ndione, R. A., Remais, J. V., Riveau, G., Senghor, S., Sokolow, S. H., Sow, S., Wolfe, C., Wood, et al
2020; 14 (7): e0008417
- **Effects of agrochemical pollution on schistosomiasis transmission: a systematic review and modelling analysis.** *The Lancet. Planetary health*
Hoover, C. M., Rumschlag, S. L., Strgar, L., Arakala, A., Gambhir, M., de Leo, G. A., Sokolow, S. H., Rohr, J. R., Remais, J. V.
2020; 4 (7): e280–e291

- **Concomitant Immunity and Worm Senescence May Drive Schistosomiasis Epidemiological Patterns: An Eco-Evolutionary Perspective.** *Frontiers in immunology*
Buck, J. C., De Leo, G. A., Sokolow, S. H.
2020; 11: 160
- **Precision mapping of snail habitat provides a powerful indicator of human schistosomiasis transmission.** *Proceedings of the National Academy of Sciences of the United States of America*
Wood, C. L., Sokolow, S. H., Jones, I. J., Chamberlin, A. J., Lafferty, K. D., Kuris, A. M., Jocque, M., Hopkins, S., Adams, G., Buck, J. C., Lund, A. J., Garcia-Vedrenne, A. E., Fiorenza, et al
2019
- **Ecological interventions to prevent and manage zoonotic pathogen spillover.** *Philosophical transactions of the Royal Society of London. Series B, Biological sciences*
Sokolow, S. H., Nova, N., Pepin, K. M., Peel, A. J., Pulliam, J. R., Manlove, K., Cross, P. C., Becker, D. J., Plowright, R. K., McCallum, H., De Leo, G. A.
2019; 374 (1782): 20180342
- **Cross-species pathogen spillover across ecosystem boundaries: mechanisms and theory.** *Philosophical transactions of the Royal Society of London. Series B, Biological sciences*
Borremans, B., Faust, C., Manlove, K. R., Sokolow, S. H., Lloyd-Smith, J. O.
2019; 374 (1782): 20180344
- **Unavoidable Risks: Local Perspectives on Water Contact Behavior and Implications for Schistosomiasis Control in an Agricultural Region of Northern Senegal.** *The American journal of tropical medicine and hygiene*
Lund, A. J., Sam, M. M., Sy, A. B., Sow, O. W., Ali, S., Sokolow, S. H., Merrell, S. B., Bruce, J., Jouanard, N., Senghor, S., Riveau, G., Lopez-Carr, D., De Leo, et al
2019
- **Modelled effects of prawn aquaculture on poverty alleviation and schistosomiasis control** *NATURE SUSTAINABILITY*
Hoover, C. M., Sokolow, S. H., Kemp, J., Sanchirico, J. N., Lund, A. J., Jones, I. J., Higginson, T., Riveau, G., Savaya, A., Coyle, S., Wood, C. L., Micheli, F., Casagrandi, et al
2019; 2 (7): 611–20
- **Emerging human infectious diseases and the links to global food production** *NATURE SUSTAINABILITY*
Rohrl, J. R., Barrett, C. B., Civitello, D. J., Craft, M. E., Delius, B., DeLeo, G. A., Hudson, P. J., Jouanard, N., Nguyen, K. H., Ostfeld, R. S., Remais, J., Riveau, G., Sokolow, et al
2019; 2 (6): 445–56
- **Gene drives for schistosomiasis transmission control.** *PLoS neglected tropical diseases*
Maier, T., Wheeler, N. J., Namigai, E. K., Tycko, J., Grewelle, R. E., Woldeamanuel, Y., Klohe, K., Perez-Saez, J., Sokolow, S. H., De Leo, G. A., Yoshino, T. P., Zamanian, M., Reinhard-Rupp, et al
2019; 13 (12): e0007833
- **Emerging human infectious diseases and the links to global food production.** *Nature sustainability*
Rohr, J. R., Barrett, C. B., Civitello, D. J., Craft, M. E., Delius, B., DeLeo, G. A., Hudson, P. J., Jouanard, N., Nguyen, K. H., Ostfeld, R. S., Remais, J. V., Riveau, G., Sokolow, et al
2019; 2 (6): 445–56
- **THE ROLE OF IRRIGATED AGRICULTURE IN SCHISTOSOMIASIS RISK IN A DAMMED LANDSCAPE IN WEST AFRICA**
Lund, A., Rehkopf, D., Sokolow, S., Jouanard, N., Sam, M., Fall, A., Riveau, G., Andrews, J., De Leo, G., Lopez-Carr, D.
AMER SOC TROP MED & HYGIENE.2019: 11
- **Potential Biological Control of Schistosomiasis by Fishes in the Lower Senegal River Basin.** *The American journal of tropical medicine and hygiene*
Arostegui, M. C., Wood, C. L., Jones, I. J., Chamberlin, A., Jouanard, N., Faye, D. S., Kuris, A. M., Riveau, G., De Leo, G. A., Sokolow, S. H.
2018
- **Estimating the elimination feasibility in the 'end game' of control efforts for parasites subjected to regular mass drug administration: Methods and their application to schistosomiasis.** *PLoS neglected tropical diseases*
Arakala, A., Hoover, C. M., Marshall, J. M., Sokolow, S. H., De Leo, G. A., Rohr, J. R., Remais, J. V., Gambhir, M.
2018; 12 (11): e0006794
- **Agrochemicals increase risk of human schistosomiasis by supporting higher densities of intermediate hosts** *NATURE COMMUNICATIONS*

- Halstead, N. T., Hoover, C. M., Arakala, A., Civitello, D. J., De Leo, G. A., Gambhir, M., Johnson, S. A., Jouanard, N., Loerns, K. A., McMahon, T. A., Ndione, R. A., Nguyen, K., Raffel, et al
2018; 9: 837
- **To Reduce the Global Burden of Human Schistosomiasis, Use 'Old Fashioned' Snail Control** *TRENDS IN PARASITOLOGY*
Sokolow, S. H., Wood, C. L., Jones, I. J., Lafferty, K. D., Kuris, A. M., Hsieh, M. H., De Leo, G. A.
2018; 34 (1): 23–40
 - **Ecological control of schistosomiasis in Sub-Saharan Africa: restoration of predator-prey dynamics to reduce transmission** *ECOLOGY AND EVOLUTION OF INFECTIOUS DISEASES: PATHOGEN CONTROL AND PUBLIC HEALTH MANAGEMENT IN LOW-INCOME COUNTRIES*
Jones, I., Lund, A., Riveau, G., Jouanard, N., Ndione, R. A., Sokolow, S. H., De Leo, G. A., Roche, B., Broutin, H., Simard, F.
2018: 236–51
 - **OU SONT LES ESCARGOTS - WHERE ARE THE SNAILS? USING REMOTE SENSING METHODS TO COMBAT SCHISTOSOMIASIS IN NORTHERN SENEGAL**
Wolfe, C., Haggerty, C., Jones, I., Chamberlin, A., Jouanard, N., Senghor, S., Wood, C., Sokolow, S., Riveau, G., De Leo, G., Rohr, J.
AMER SOC TROP MED & HYGIENE.2018: 19
 - **AN ECO-EVOLUTIONARY PERSPECTIVE ON SCHISTOSOMIASIS**
Buck, J., De Leo, G., Rosental, B., Sokolow, S.
AMER SOC TROP MED & HYGIENE.2018: 418
 - **LOCAL PERCEPTIONS OF SEASONALITY AND REPORTED WATER CONTACT BEHAVIOR IN THE SAHEL: IMPLICATIONS FOR SCHISTOSOMIASIS TRANSMISSION**
Lund, A., Sow, O., Sokolow, S., Chamberlin, A., Jones, I., Jouanard, N., Riveau, G., Lopez-Carr, D., De Leo, G.
AMER SOC TROP MED & HYGIENE.2018: 418–19
 - **COMPUTER VISION AND MACHINE LEARNING ENABLE ENVIRONMENTAL DIAGNOSTICS FOR TARGETING SCHISTOSOMIASIS CONTROL**
Sokolow, S., Liu, Z., Chamberlin, A., Le Boa, C., Wood, C., Jones, I., Grewelle, R., De Leo, G.
AMER SOC TROP MED & HYGIENE.2018: 418
 - **Heterogeneity in schistosomiasis transmission dynamics** *JOURNAL OF THEORETICAL BIOLOGY*
Mari, L., Ciddio, M., Casagrandi, R., Perez-Saez, J., Bertuzzo, E., Rinaldo, A., Sokolow, S. H., De Leo, G. A., Gatto, M.
2017; 432: 87–99
 - **The spatial spread of schistosomiasis: A multidimensional network model applied to Saint-Louis region, Senegal** *ADVANCES IN WATER RESOURCES*
Ciddio, M., Mari, L., Sokolow, S. H., De Leo, G. A., Casagrandi, R., Gatto, M.
2017; 108: 406–15
 - **Nearly 400 million people are at higher risk of schistosomiasis because dams block the migration of snail-eating river prawns** *PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY B-BIOLOGICAL SCIENCES*
Sokolow, S. H., Jones, I. J., Jocque, M., La, D., Cords, O., Knight, A., Lund, A., Wood, C. L., Lafferty, K. D., Hoover, C. M., Collender, P. A., Remais, J. V., Lopez-Carr, et al
2017; 372 (1722)
 - **Disease ecology, health and the environment: a framework to account for ecological and socio-economic drivers in the control of neglected tropical diseases** *PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY B-BIOLOGICAL SCIENCES*
Garchitorena, A., Sokolow, S. H., Roche, B., Ngonghala, C. N., Jocque, M., Lund, A., Barry, M., MORDECAI, E. A., Daily, G. C., Jones, J. H., Andrews, J. R., Bendavid, E., Luby, et al
2017; 372 (1722)
 - **A novel framework to account for ecological drivers in the control and elimination of environmentally transmitted disease: a modelling study**
De Leo, G. A., Sokolow, S. H., Garchitorena, A., Ngonghala, C. N., Lund, A., Barry, M., Burke, K. S., Mordecai, E. A., Daily, G. C., Jones, J. H., Andrews, J. R., Bendavid, E., Luby, et al
ELSEVIER SCIENCE INC.2017: 5
 - **Big-data-driven modeling unveils country-wide drivers of endemic schistosomiasis** *SCIENTIFIC REPORTS*
Mari, L., Gatto, M., Ciddio, M., Dia, E. D., Sokolow, S. H., De Leo, G. A., Casagrandi, R.
2017; 7

- **Global Assessment of Schistosomiasis Control Over the Past Century Shows Targeting the Snail Intermediate Host Works Best.** *PLoS neglected tropical diseases*
Sokolow, S. H., Wood, C. L., Jones, I. J., Swartz, S. J., Lopez, M., Hsieh, M. H., Lafferty, K. D., Kuris, A. M., Rickards, C., De Leo, G. A.
2016; 10 (7)
- **Infection with schistosome parasites in snails leads to increased predation by prawns: implications for human schistosomiasis control** *JOURNAL OF EXPERIMENTAL BIOLOGY*
Swartz, S. J., De Leo, G. A., Wood, C. L., Sokolow, S. H.
2015; 218 (24): 3962-3967
- **A Theoretical Analysis of the Geography of Schistosomiasis in Burkina Faso Highlights the Roles of Human Mobility and Water Resources Development in Disease Transmission** *PLOS NEGLECTED TROPICAL DISEASES*
Perez-Saez, J., Mari, L., Bertuzzo, E., Casagrandi, R., Sokolow, S. H., De Leo, G. A., Mande, T., Ceperley, N., Froehlich, J., Sou, M., Karambiri, H., Yacouba, H., Maiga, et al
2015; 9 (10)
- **Reduced transmission of human schistosomiasis after restoration of a native river prawn that preys on the snail intermediate host** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Sokolow, S. H., Huttinger, E., Jouanard, N., Hsieh, M. H., Lafferty, K. D., Kuris, A. M., Riveau, G., Senghor, S., Thiam, C., N'Diaye, A., Faye, D. S., De Leo, G. A.
2015; 112 (31): 9650-9655
- **Pathogenesis of Human Schistosomiasis** *Emerging and Re-emerging Human Infections*
Le, T., Sokolow, S. H., Hamam, O., Fu, C., Hsieh, M. H.
Wiley and Sons Publishers.2015
- **OCEAN HEALTH** *ROUTLEDGE HANDBOOK OF OCEAN RESOURCES AND MANAGEMENT*
Micheli, F., De Leo, G., Ferretti, F., Hines, A., Honey, K., Kroeker, K., Martone, R. G., McCauley, D. J., O'Leary, J. K., Rosim, D. F., Sokolow, S. H., Stock, A., Wood, et al
2015: 108–26
- **Ocean Health** *Handbook of Ocean Resources and Management*
Micheli, F., De Leo, G. A., Ferretti, F., Honey, K., Kroeker, K., Martone, R. G., McCauley, D. G., O'Leary, J., Rosim, D., Sokolow, S. H., Stock, A., Wood, C. L.
Earthscan (UK).2015
- **The Prawn *Macrobrachium vollohovenii* in the Senegal River Basin: Towards Sustainable Restocking of All-Male Populations for Biological Control of Schistosomiasis.** *PLoS neglected tropical diseases*
Savaya Alkalay, A., Rosen, O., Sokolow, S. H., Faye, Y. P., Faye, D. S., Aflalo, E. D., Jouanard, N., Zilberg, D., Huttinger, E., Sagi, A.
2014; 8 (8)
- **Sapronosis: a distinctive type of infectious agent.** *Trends in parasitology*
Kuris, A. M., Lafferty, K. D., Sokolow, S. H.
2014; 30 (8): 386-393
- **Regulation of laboratory populations of snails (*Biomphalaria* and *Bulinus* spp.) by river prawns, *Macrobrachium* spp. (Decapoda, Palaemonidae): Implications for control of schistosomiasis.** *Acta tropica*
Sokolow, S. H., Lafferty, K. D., Kuris, A. M.
2014; 132: 64-74
- **Predictive Power of Air Travel and Socio-Economic Data for Early Pandemic Spread** *PLOS ONE*
Hosseini, P., Sokolow, S. H., Vandegrift, K. J., Kilpatrick, A. M., Daszak, P.
2010; 5 (9)
- **Allometry and spatial scales of foraging in mammalian herbivores** *ECOLOGY LETTERS*
Laca, E. A., Sokolow, S., Galli, J. R., Cangiano, C. A.
2010; 13 (3): 311-320
- **Ecology of avian influenza viruses in a changing world** *YEAR IN ECOLOGY AND CONSERVATION BIOLOGY 2010*
Vandegrift, K. J., Sokolow, S. H., Daszak, P., Kilpatrick, A. M.
2010; 1195: 113-128

- **Effects of a changing climate on the dynamics of coral infectious disease: a review of the evidence** *DISEASES OF AQUATIC ORGANISMS*
Sokolow, S.
2009; 87 (1-2): 5-18
- **Editor's choice: Disease dynamics in marine metapopulations: modelling infectious diseases on coral reefs** *JOURNAL OF APPLIED ECOLOGY*
Sokolow, S. H., Foley, P., Foley, J. E., Hastings, A., Richardson, L. L.
2009; 46 (3): 621-631
- **Causal inference in disease ecology: investigating ecological drivers of disease emergence** *FRONTIERS IN ECOLOGY AND THE ENVIRONMENT*
Plowright, R. K., Sokolow, S. H., Gorman, M. E., Daszak, P., Foley, J. E.
2008; 6 (8): 420-429
- **Spatial epidemiology of Caribbean yellow band syndrome in *Montastrea* spp. coral in the eastern Yucatan, Mexico** *HYDROBIOLOGIA*
Foley, J. E., Sokolow, S. H., Girvetz, E., Foley, C. W., Foley, P.
2005; 548: 33-40
- **Epidemiologic evaluation of diarrhea in dogs in an animal shelter** *AMERICAN JOURNAL OF VETERINARY RESEARCH*
Sokolow, S. H., Rand, C., Marks, S. L., Drazenovich, N. L., Kather, E. J., Foley, J. E.
2005; 66 (6): 1018-1024