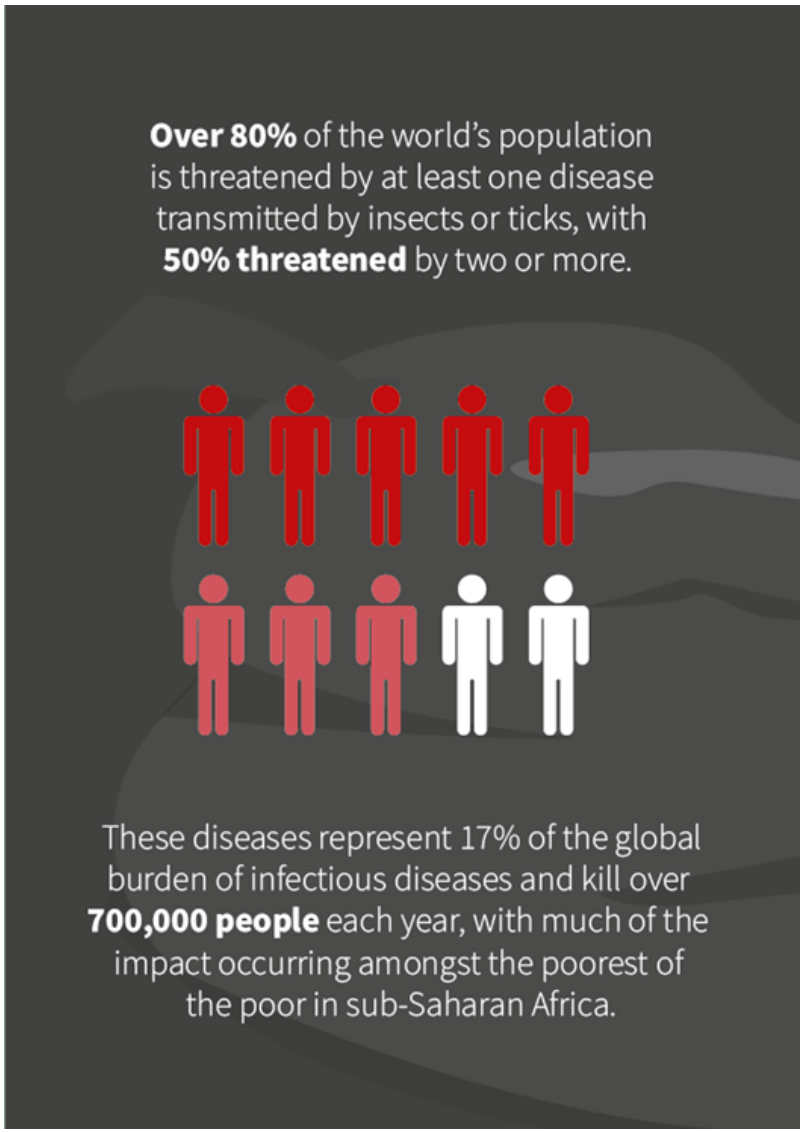
BOVA

Building **O**ut **V**ector borne diseases

in sub-Saharan **A**frica

BOVA network

What's the problem?



- Vector-borne diseases are a major environmental threat to countries in sub-Saharan Africa & their economies
- Building out vectors *and designing healthier homes in general* will lead to more resilient dwellings, villages, towns and cities

The basic split

Rural/Peri-urban
= malaria

Urban/Peri-urban
= dengue & worse

Dengue, Zika, yellow fever and chikungunya are all *Aedes* transmitted diseases

dengue haemorrhagic feve

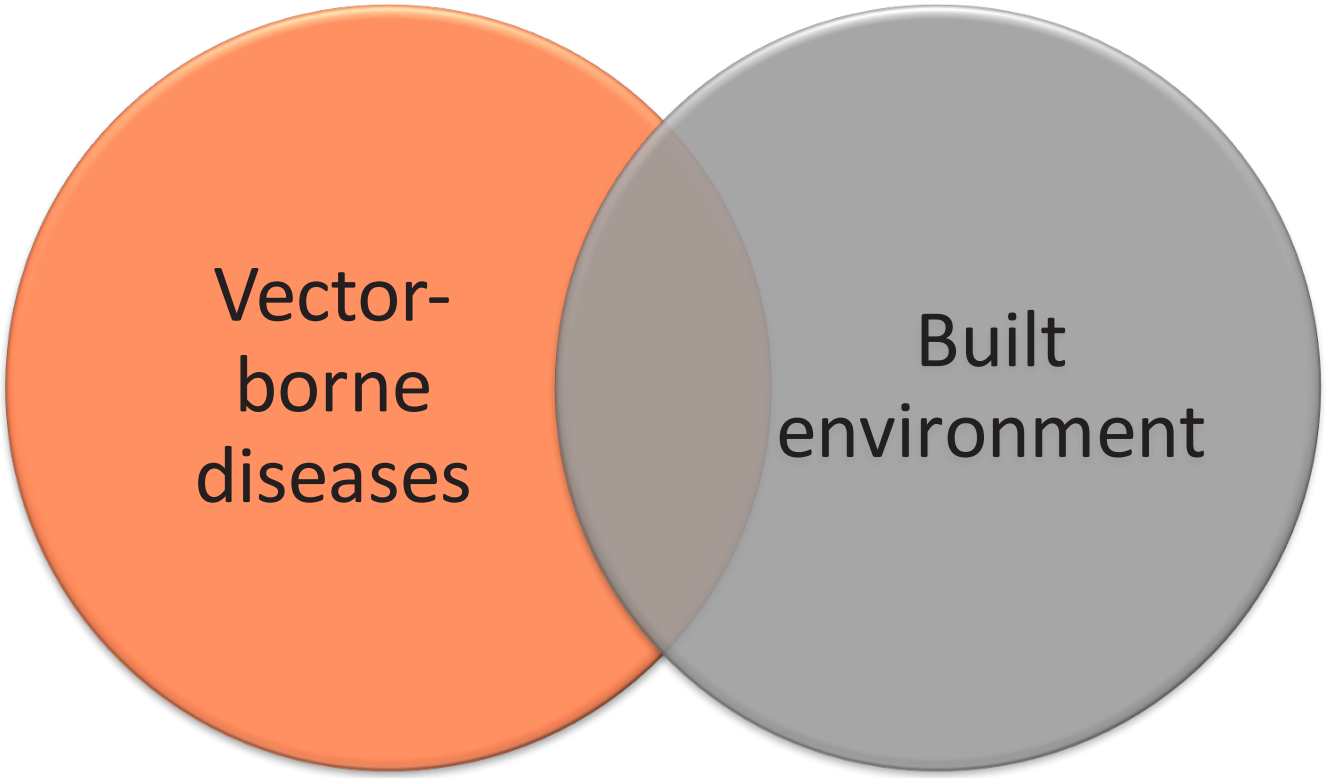
Zika

yellow fever

chikungunya

What is the BOVA Network?

- Interdisciplinary network of researchers and practitioners working on insect-borne diseases and the built environment
- Aims to establish a new research discipline



What BOVA has achieved

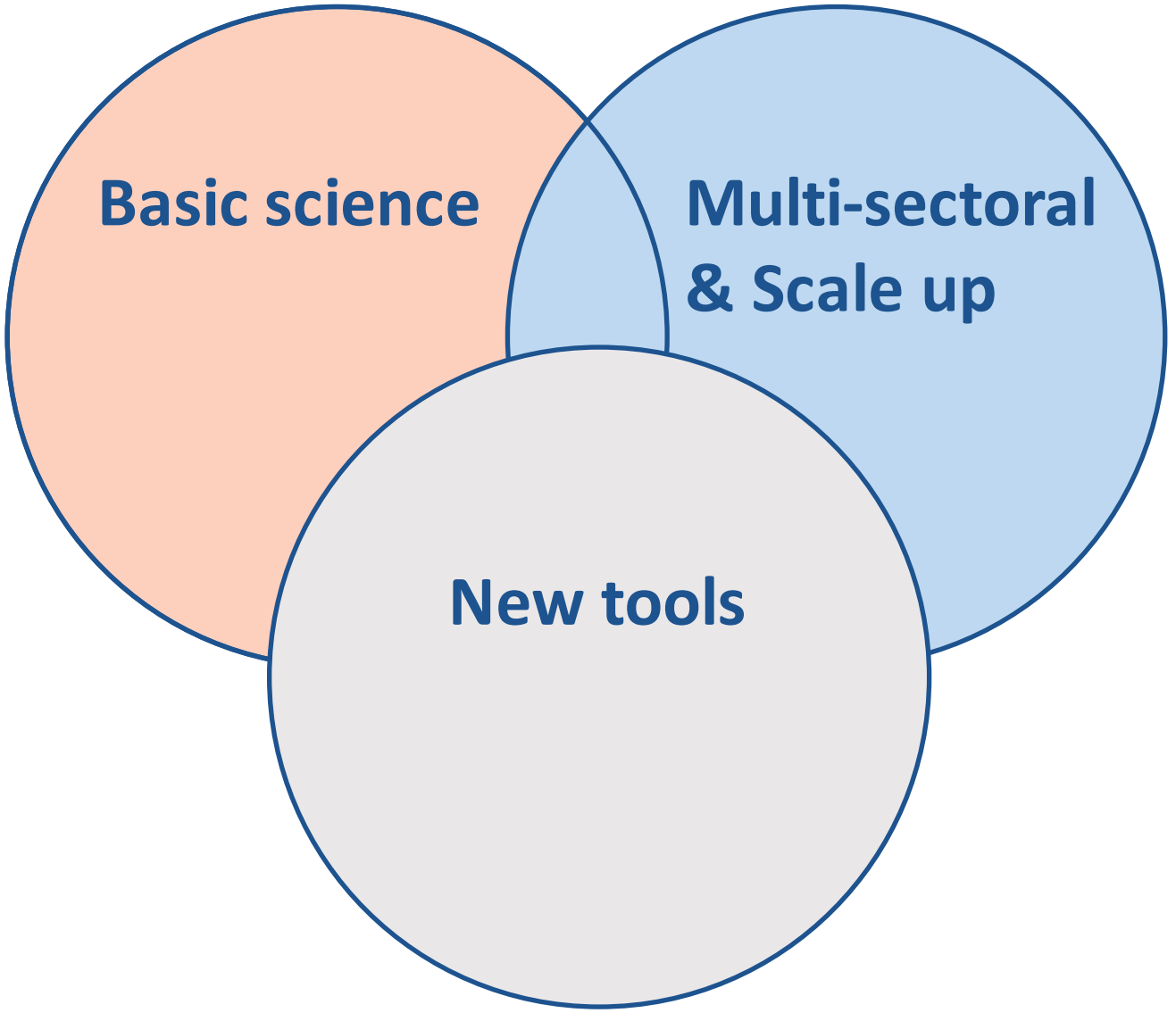
- Our Network of nearly 500 members
- Eight pump-priming projects
- Seven grant writing workshops
- Continuing advocacy and contributions to high level reports and policy documents
- Publications
- Simple messages: what can be done now

BOVA network

BOVA Global Membership

We have nearly 500 BOVA Network Members worldwide

Eight pump-priming projects



Eight pump priming projects

Computer Fluid Dynamic modelling of mosquito attractants - The Gambia

Studying how house height affects mosquito entry - The Gambia

Improving social housing design to prevent malaria - Ethiopia

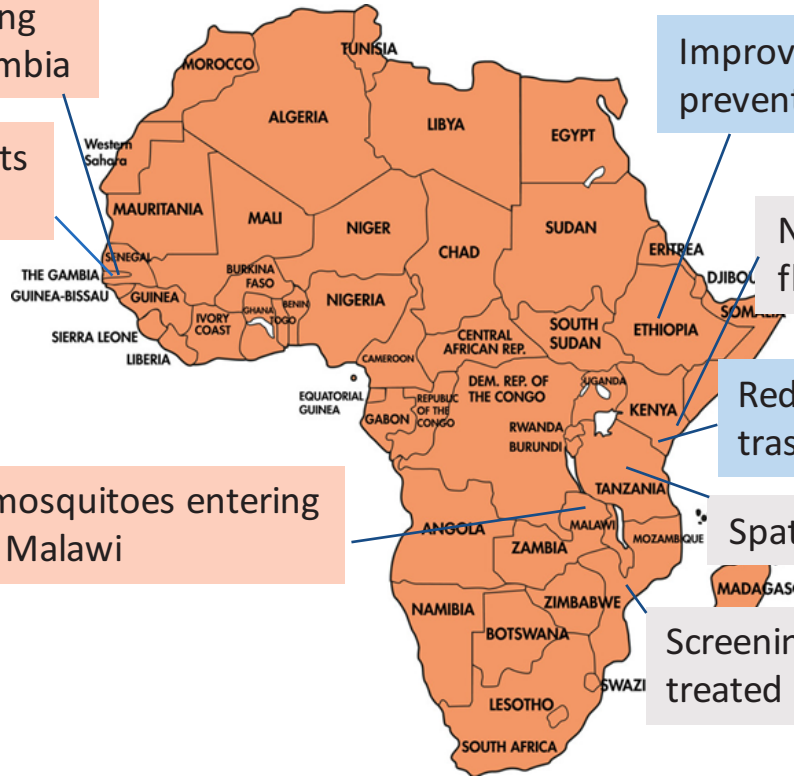
New floors for Chiggers flea control - Kenya

Reducing mosquito habitats: trash to treasure - Kenya

Filming mosquitoes entering houses - Malawi

Spatial-repellent chairs - Tanzania

Screening with novel insecticide-treated netting - Mozambique

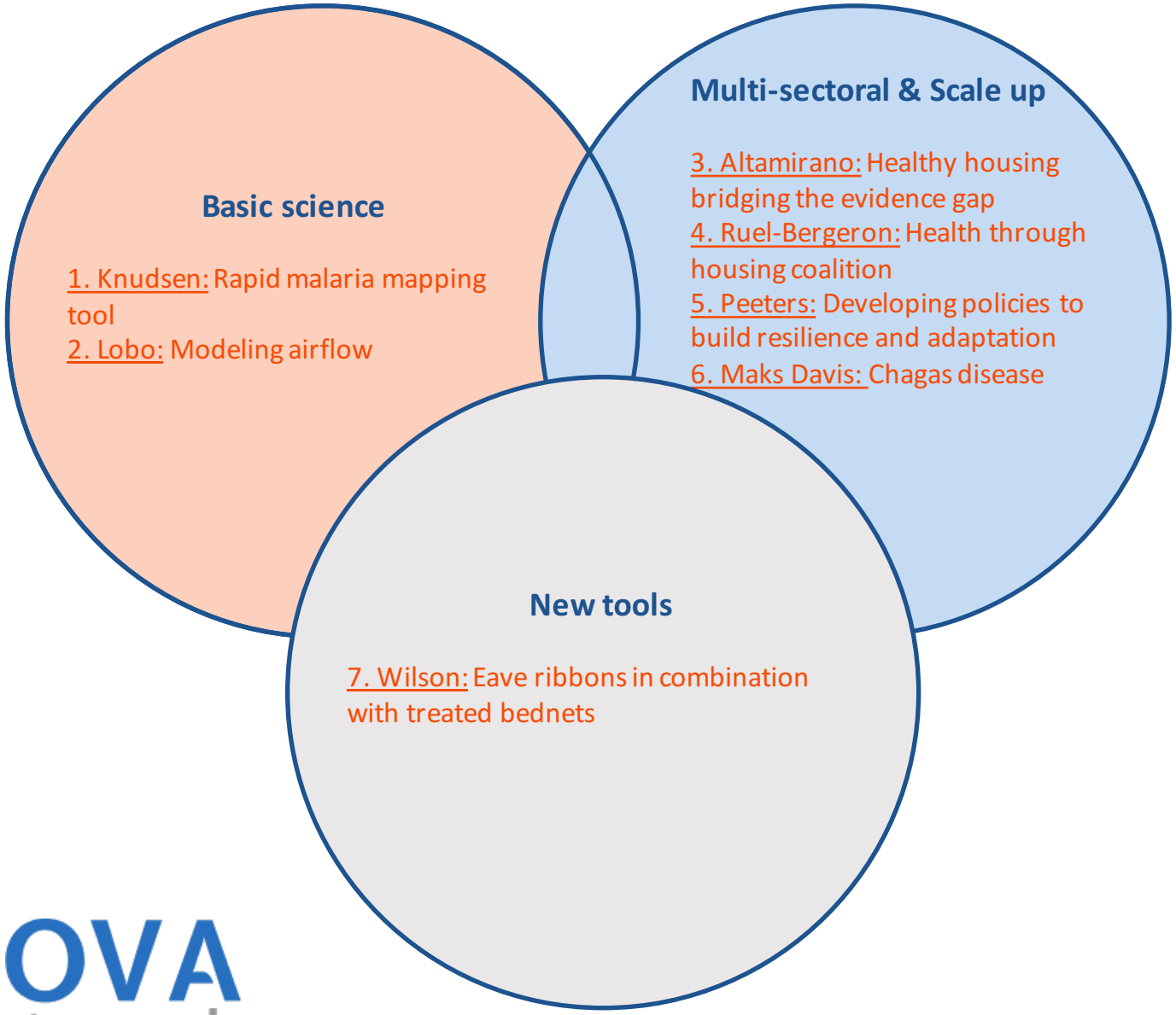


Basic research

New tools

Multi-sectoral & Scale up

Seven grant writing workshops



BOVA network

We work in partnership

UN HABITAT
FOR A BETTER URBAN FUTURE

RBM Partnership
To End Malaria

PAN-AFRICA MOSQUITO CONTROL ASSOCIATION
PAMCA

World Health Organization

Global Vector Hub
The global open access community
for vector control information and research.

Advocacy, contributions to guidance documents and policy recommendations

World Health Organisation (WHO)

We are currently engaging with the WHO to advise on updates to their Healthy Housing Guidelines.

UN-Habitat

We are contributing to a UN-Habitat training manual designed to be used alongside their International Guidelines for Integrating Health into Urban Design & Planning.

Commonwealth mayors

We are working in partnership with the Commonwealth Local Government Forum, UN-Habitat and the Roll Back Malaria Partnership to find a means to support mayors in accelerating the healthy cities agenda.

Pan-Africa Mosquito Control Association (PAMCA)

We are in discussions with the directors of the PAMCA, with a view to working with them to promote improvements to the built environment as an important arm of mosquito control.

Roll Back Malaria Partnership to End Malaria

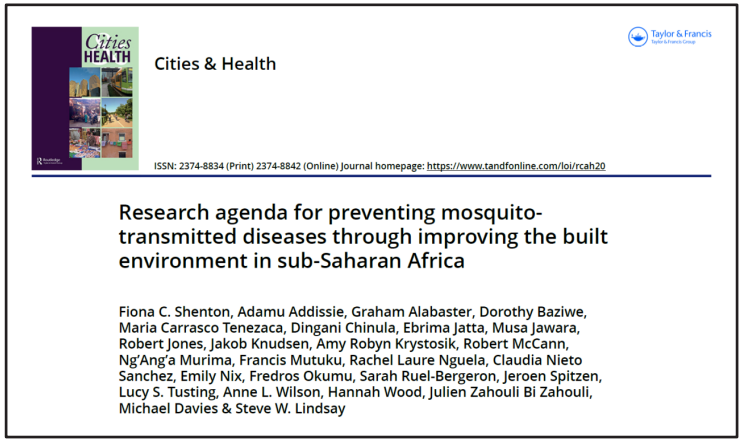
The BOVA Network has a strong presence within this partnership, contributing to two of the working groups: Vector Control and Multi-sectoral working groups.

Continuing advocacy and contributions to high level reports and policy documents

- Lancet Commission on mosquitoes, viruses and cities
- Working groups:
  - RBM work streams
  - Strategic Technical Advisory Group-NTDs
  - International Guidelines on Urban and Territorial Planning
- International meetings:
  - Roll Back Malaria, Switzerland
  - BOVA Open Network Meeting, Kenya
  - Healthy City Design, London
  - International Conference on Urban Health, China
  - American Society of Tropical Medicine & Hygiene, USA

Publications

More than 10 in the last two years….



Cities & Health

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Research agenda for preventing mosquito-transmitted diseases through improving the built environment in sub-Saharan Africa

Fiona C. Shenton, Adamu Addissie, Graham Alabaster, Dorothy Baziwe, Maria Carrasco Tenezaca, Dingani Chinula, Ebrima Jatta, Musa Jawara, Robert Jones, Jakob Knudsen, Amy Robyn Krystosik, Robert McCann, Ng'Ang'a Murima, Francis Mutuku, Rachel Laure Nguela, Claudia Nieto Sanchez, Emily Nix, Fredros Okumu, Sarah Ruel-Bergeron, Jeroen Spitzen, Lucy S. Tusting, Anne L. Wilson, Hannah Wood, Julien Zahouli Bi Zahouli, Michael Davies & Steve W. Lindsay

PLOS MEDICINE

RESEARCH ARTICLE

Housing and child health in sub-Saharan Africa: A cross-sectional analysis

Lucy S. Tusting[1]*, Peter W. Gething[2], Harry S. Gibson[2], Brian Greenwood[1], Jakob Knudsen[3], Steve W. Lindsay[4], Samir Bhatt[2,5]

1 Department of Disease Control, London School of Hygiene & Tropical Medicine, London, United Kingdom, 2 Big Data Institute, Nuffield Department of Medicine, University of Oxford, United Kingdom, 3 The Royal Danish Academy of Fine Arts, Schools of Architecture, Design and Conservation, Copenhagen, Denmark, 4 Department of Biosciences, Durham University, Durham, United Kingdom, 5 Department of Infectious Disease Epidemiology, Imperial College London, London, United Kingdom

LETTER

OPEN

https://doi.org/10.1038/s41586-019-1050-5

Mapping changes in housing in sub-Saharan Africa from 2000 to 2015

Lucy S. Tusting[1]*, Donal Bisanzio[2,3], Graham Alabaster[4], Ewan Cameron[5], Richard Cibulskis[6], Michael Davies[7], Seth Flaxman[8], Harry S. Gibson[5], Jakob Knudsen[9], Charles Mbogo[10,11], Fredros O. Okumu[12,13,14], Lorenz von Seidlein[15], Daniel J. Weiss[5], Steve W. Lindsay[16], Peter W. Gething[5] & Samir Bhatt[5,17]

PLOS | MEDICINE

POLICY FORUM

Knowledge gaps in the construction of rural healthy homes: A research agenda for improved low-cost housing in hot-humid Africa

Lorenz von Seidlein[1,2]*, Hannah Wood[3], Otis Sloan Brittain[3], Lucy Tusting[4], Alexa Bednarz[5], Salum Mshamu[6], Catherine Kahabuka[6], Jacqueline Deen[7], David Bell[8], Steve W. Lindsay[9], Jakob Knudsen[3,10]

PLOS NEGLECTED TROPICAL DISEASES

REVIEW

A greener vision for vector control: The example of the Singapore dengue control programme

Shuzhen Sim[1], Lee Ching Ng[1], Steve W. Lindsay[2], Anne L. Wilson[3]*

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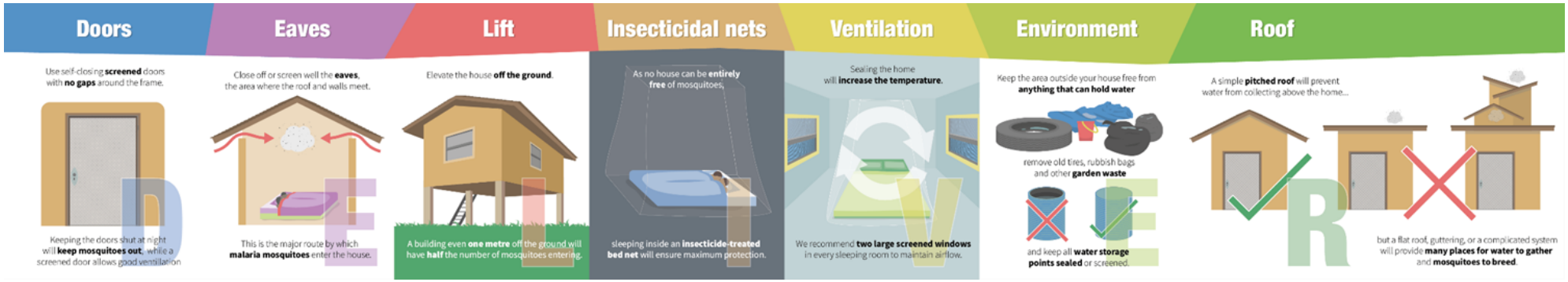
PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY B

BIOLOGICAL SCIENCES

"Recommendations for building out vector-borne diseases: the DELIVER mnemonic" *in press*

DELIVER



BOVA network

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Find out more about the network!

www.bovanetwork.org

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BOVA network

GCRF Global Challenges Research Fund

BBSRC bioscience for the future

MRC Medical Research Council

NERC SCIENCE OF THE ENVIRONMENT

Acknowledgments: