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# Open Access: Is it the future for all Scientific Publications?

*Dr. Grant McFadden*

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*Department of Molecular Genetics & Microbiology,  
College of Medicine, University of Florida*



# Open Access What is it?

- **Free**, immediate access online
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*Bethesda Principles, April 2003*





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## TWO PATHS TO OPEN ACCESS

- **Gold path** – the entire journal contents are open and available. Open journals are usually supported through the payment of author fees.
- **Green path** - authors submit a copy of their articles to an open repository, e.g., PubMed Central
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## Facts about Open Access:

- **Open access is not a business model; it is a property of publication**
- **Ability to pay plays no role in editorial process**
- **Ensures stable model of global dissemination**
- **Fully OA or hybrid models of publishing thriving**
- **Open access embodies the concept of peer review**
- **Catalysts for change**



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## Why Open Access?

- **Maximum impact for authors**  
access to the largest possible global audience  
visibility of each paper to be measured in its own right
- **Greatly expanded access to research**  
for scientists, educators, physicians, the public
- **New ways to access and use literature**  
full-text searching, data integration, and mining





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## How is OA Growing?

- OA is still in its infancy
- Some traditional publishers are experimenting with OA format journals as part of their portfolio
- Hard to predict if any one format will predominate in the future



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## Growing list of OA mandates

- Internationally
  - The Swedish Research Council requires free access to research results
  - Dutch Scientific Research must make their scientific research available on the internet and accessible to everyone
- U.S. – Institutional and Federal Level
  - 5 Premier Institutions sign **compact for Open-Access Publications**
  - **Federal Research Public Access Act** (FRPAA) introduced at the Senate level and will likely be introduced in the House shortly



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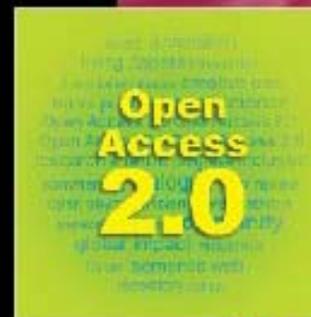
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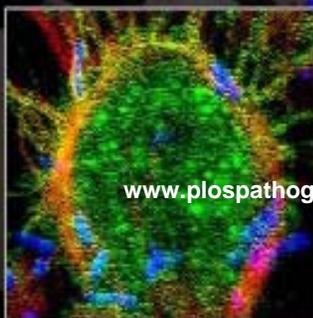
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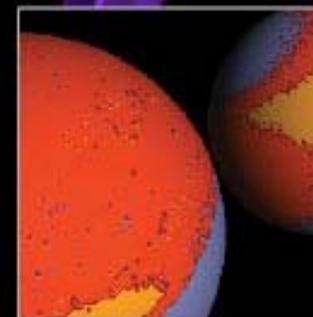
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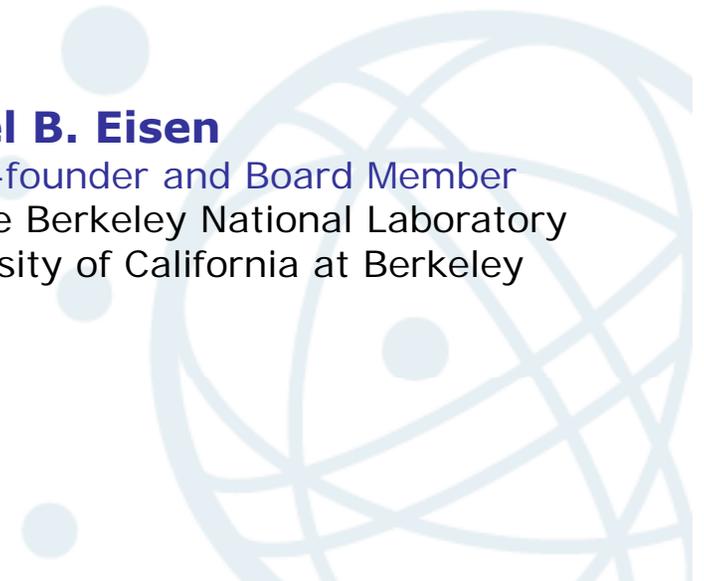
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## Open Access is still in its early days

- A **grassroots initiative by scientific community** to enforce deposition of published research into a public repository (Pub Med Central)
- Circulated an **open letter** urging publishers to increase access to research literature (>30,000 signatories)
- In December, 2002, \$9 million grant from Moore Foundation to **launch open access journals**.

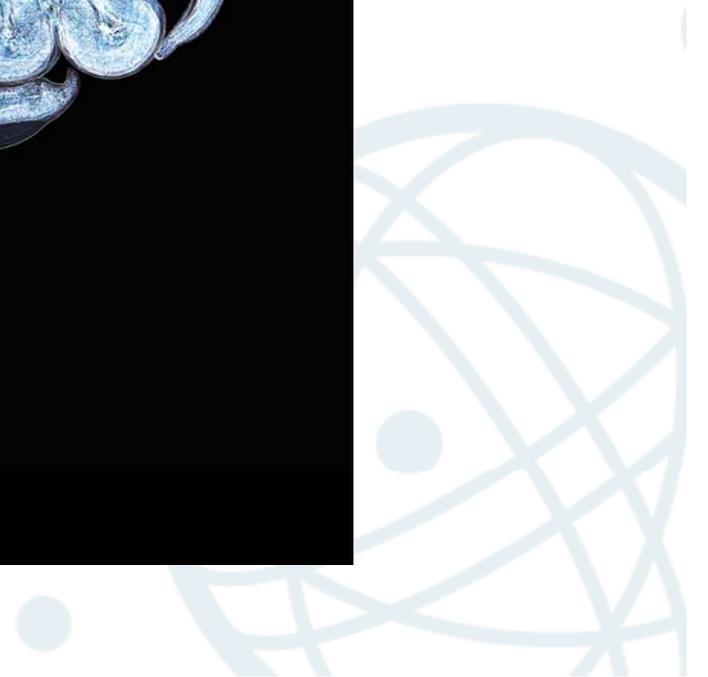


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# PLOS PATHOGENS





## My Own role at PLoS Pathogens

- I was invited in 2005 to join the Board by John Young, the first Editor-in-Chief
- Started as Associate Editor, then Section Editor for Virology, and now Deputy EIC
- I found the journal's emphasis on pathogen-host interface appealing
- In 2009, the journal continues to grow rapidly (Current Impact factor of 9)
- Is still defining its scientific "space"



Recent Research

Featured Discussions

**The Aurora Kinase in *Trypanosoma brucei* Plays Distinctive Roles in Metaphase-Anaphase Transition and Cytokinetic Initiation**

**Autophagy Gene Variant *IRGM* 2261T Contributes to Protection from Tuberculosis Caused by *Mycobacterium tuberculosis* but Not by *M. africanum* Strains**

**Quantitation of Human Seroresponsiveness to Merkel Cell Polyomavirus**

**Bidirectional Introgressive Hybridization between a Cattle and Human Schistosome Species**

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***Chlamydia trachomatis* Infection and Anti-Hsp60 Immunity:  
The Two Sides of the Coin**

August 2009 Issue



*PLoS Pathogens* is an [open-access](#) journal that publishes important new ideas on bacteria, fungi, parasites, prions, and viruses that contribute to our understanding of the biology of pathogens and pathogen-host interactions.

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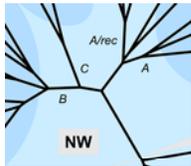
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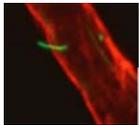
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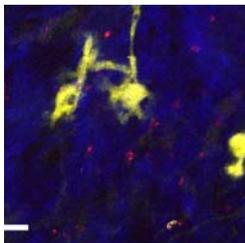
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Genetic Detection and Characterization of Lujo Virus, a New Hemorrhagic Fever–Associated Arenavirus from Southern Africa (Briese et al.)



• Real-Time High Resolution 3D Imaging of the Lyme Disease Spirochete Adhering to and Escaping from the Vasculature of a Living Host (Moriarty et al.)



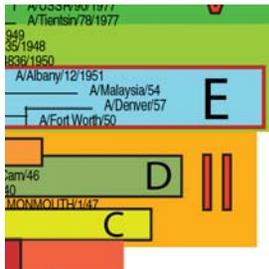
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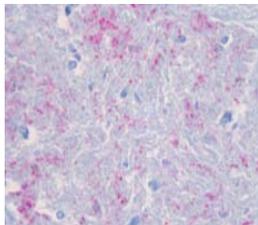
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- Multiple Reassortment Events in the Evolutionary History of H1N1 Influenza A Virus Since 1918 (Nelson et al.)



- BSE Case Associated with Prion Protein Gene Mutation (Richt and Hall)



- Suppression of Plant Resistance Gene-Based Immunity by a Fungal Effector (Houterman et al.)

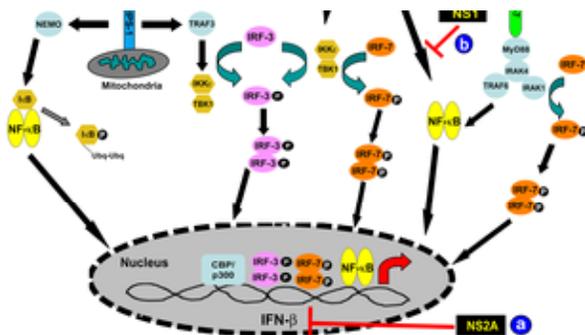




## *PLOS Pathogens Pearls*



- Open Access compendium of the "lessons-that-last."
- Dr. Hiten Madhani of UCSF, Pearls Editor
- Educational resource for professors and graduate students



"Virus and Host Determinants of West Nile Virus Pathogenesis."  
By Michael S. Diamond

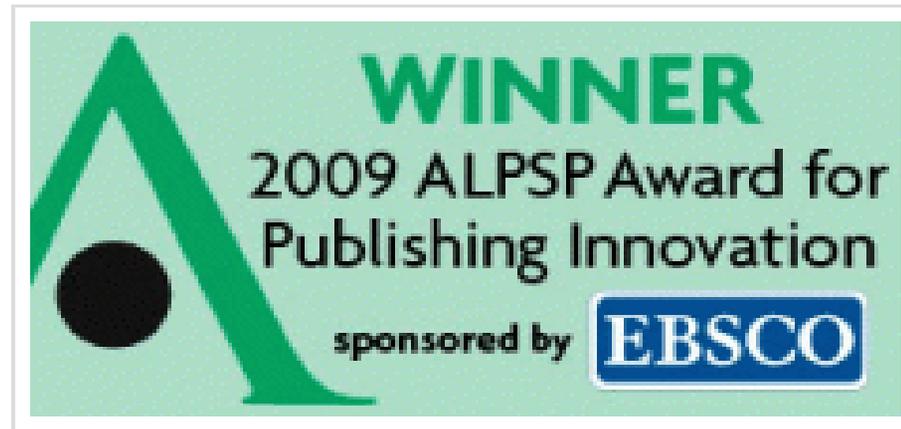


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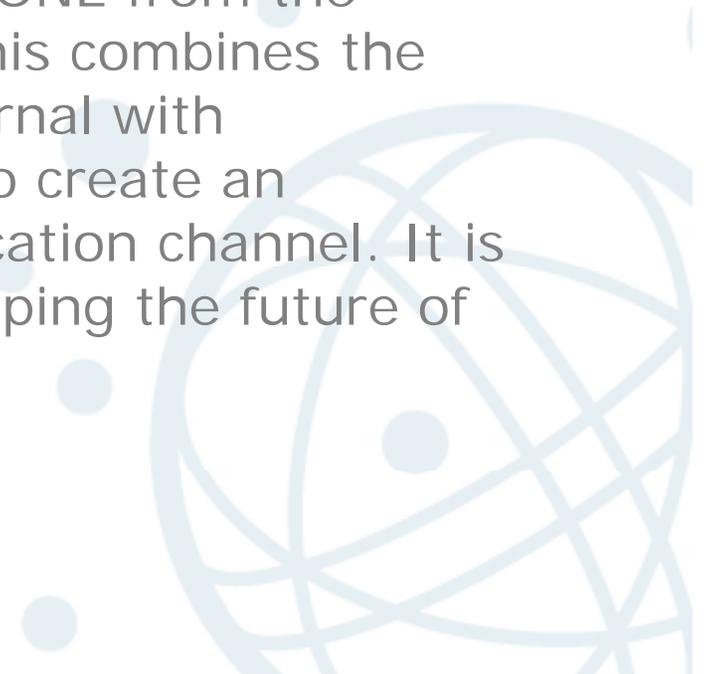
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- The 2009 winner was PLoS ONE from the Public Library of Science. This combines the traditional values of the journal with innovative online features to create an inclusive and efficient publication channel. It is bold and successful and shaping the future of publishing.



RESEARCH ARTICLE



# The Diploid Genome Sequence of an Individual Human

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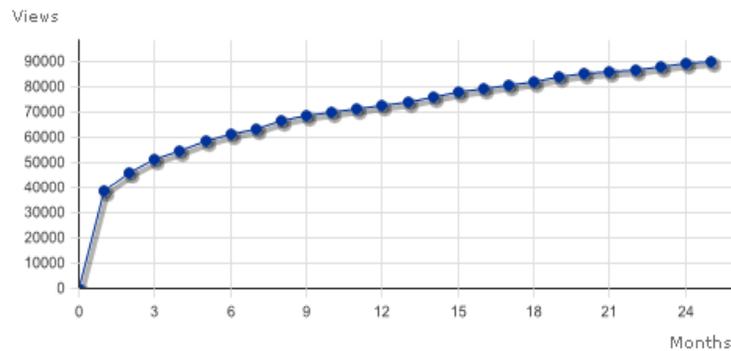
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## **Opportunity at the Article Level**

### **What Does this Mean for My Research?**





## Expanding access means more citations

- As part of the tenure and promotion process, faculty quantify the significance of their work to their discipline.

Traditional measures include:

- **Ranking of the journals in which you publish known as the Impact factor.**
- **Number of times other scholars have cited your works.**



## Citation advantage of open-access? Numerous studies offer mixed results and discipline variations

Norris, M. and others studied citation rates in Open Access vs Toll Access (Subscription) journals for ecology, applied mathematics, sociology, and economics .

"Of a sample of 4,633 articles examined, 2,280 (49%) were OA and had a mean citation count of 9.04 whereas the mean for (toll access) TA articles was 5.76. There appears to be a clear citation advantage for those articles that are OA as opposed to those that are TA." [Abstract] Rates varied for each discipline.

[The citation advantage of open-access articles](#). *Journal of the American Society for Information Science and Technology*, Vol. 59, No. 12, 2008, 1963-1972, published online: 9 July 2008

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EDITORIAL



# Ten Simple Rules for Getting Published

Article

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Philip E. Bourne

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Philip E. Bourne is Editor-in-Chief of *PLoS Computational Biology*. E-mail: [bourne@sdsc.edu](mailto:bourne@sdsc.edu)

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**1** The student council (<http://www.iscbsc.org/>) of the International Society for Computational Biology asked me to present my thoughts on getting published in the field of computational biology at the Intelligent Systems in Molecular Biology conference held in Detroit in late June of 2005. Close to 200 bright young souls (and a few not so young) crammed into a small room for what proved to be a wonderful interchange among a group of whom approximately one-half had yet to publish their first paper. The advice I gave that day I have modified and present as ten rules for getting published.

## Rule 1: Read many papers, and learn from both the good and the bad work of others.

It is never too early to become a critic. Journal clubs, where you critique a paper as a group, are

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More than anything else this will be a discussion period in which there is an active discussion around the topic for that week. There will be prerequisite reading and this will form the basis of the class.

**Source Material:** What textbooks, journals, or handouts will be used or recommended? The use of Medline and other computerized reference searching by students is strongly encouraged.

**I have written a series of “Ten Rules” Editorials that have been very popular – some have been downloaded over 30,000 times. The open access collection is at <http://collections.plos.org/ploscompbiol/tensimplerules.php> and also indexed in PubMed. These will form the basis of the course material.**

There will be one lecture per week on the following topic. I will invite faculty and students who have been through the respective experience of the week to come and be part of the dialog and discussion.

- Elements of scientific success according to Hamming and others
- Getting the most from the graduate student experience
- Rules for giving good oral presentations
- Rules for preparing and presenting posters
- Rules for good scientific paper writing
- Rules for making good scientific illustrations
- Rules for establishing a successful collaboration
- Rules for reviewing scientific articles
- Rules for getting your first postdoctoral position
- Rules for getting your first grant or fellowship

# Ten Simple Rules To Combine Teaching and Research

Article

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Quentin Vicens<sup>1</sup>, Philip E. Bourne<sup>2\*</sup>

**1** University of Colorado, Boulder, Colorado, United States of America, **2** Skaggs School of Pharmacy and Pharmaceutical Science, University of California San Diego, La Jolla, California, United States of America

**Citation:** Vicens Q, Bourne PE (2009) Ten Simple Rules To Combine Teaching and Research. *PLoS Comput Biol* 5(4): e1000358. doi:10.1371/journal.pcbi.1000358

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**Competing interests:** The authors have declared that no competing interests exist.

\* E-mail: [bourne@sdsc.edu](mailto:bourne@sdsc.edu)

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The late Lindley J. Stiles famously made himself an advocate for teaching during his professorship at the University of Colorado: "If a better world is your aim, all must agree: The best should teach" (<http://thebestshouldteach.org/>). In fact, dispensing high-quality teaching and professional education is the primary goal of any university [1]. Thus, for most faculty positions in academia, teaching is a significant requirement of the job. Yet, the higher education programs offered to Ph.D. students do not necessarily incorporate any form of teaching exposure. We offer 10 simple rules that should help you to get prepared for the challenge of teaching while keeping some composure.

## Rule 1: Strictly Budget Your Time for Teaching and for Doing Research [Top](#)

This rule may seem straightforward, but respecting it actually requires more discipline and skill than it



## Ten Simple Rules Collection



Written by *PLoS Computational Biology* Editor-in-Chief Philip E. Bourne, sometimes with collaborators, the "Ten Simple Rules" provide a quick, concentrated guide for mastering some of the professional challenges research scientists face in their careers.

Download the Ten Simple Rules Collection: [Screen PDF \(400 KB\)](#) | [Large PDF \(1.3 MB\)](#)

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Translated by members of the [EpiMan Forum](#), coordinated by Qiguo Lian ([qglian \[at\] fudan.edu.cn](mailto:qglian@fudan.edu.cn)). Please note that the translation is the work of the authors and PLoS is not responsible for any inaccuracies or additional content.



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Vicens Q, Bourne PE

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## TEN SIMPLE RULES COLLECTION IN CHINESE

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Containing translations of the entire collection from October 2005 to June 2008.

Translated by members of the EpiMan Forum (<http://forum.epiman.cn>), coordinated by Qiguo Lian ([qglian@fudan.edu.cn](mailto:qglian@fudan.edu.cn))

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#### Ten Simple Rules for Good Presentations

Professor Philip Bourne, Editor-in-Chief of Public Library of Science (PLoS) Computational Biology, talks about the ten basic principles of making good presentations.

**Authors:** Philip E Bourne

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#### Ten Simple Rules for Getting Grants

This piece follows an earlier Editorial, "Ten Simple Rules for Getting Published" [1], which has generated significant interest, is well read, and continues to generate a variety of positive...

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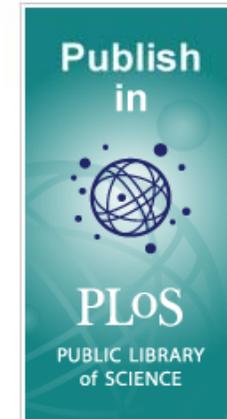
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RESEARCH ARTICLE



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## Abstract [Top](#)

### Background

Leptospirosis has become an urban health problem as slum

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# Impact of Environment and Social Gradient on *Leptospira* Infection in Urban Slum

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## Abstract

### Background

*Leptospirosis* has become an urban health problem as *slum settlements* have expanded worldwide. Efforts to identify interventions for urban *leptospirosis* have been hampered by the lack of population-based information on *Leptospira* transmission determinants. The aim of the study was to estimate the prevalence of *Leptospira* infection and identify risk factors for infection in the urban slum setting.

### Methods and Findings

We performed a community-based survey of 3,171 slum residents from Salvador, Brazil. *Leptospira* agglutinating antibodies were measured as a marker for prior infection. Poisson regression models evaluated the association between the presence of *Leptospira* antibodies and environmental attributes obtained from Geographical Information System surveys and indicators of socioeconomic status and exposures for individuals. Overall prevalence of *Leptospira* antibodies was 15.4% (95% confidence interval [CI], 14.0–16.8). Households of subjects with *Leptospira* antibodies clustered in squatter areas at the bottom of valleys. The risk of acquiring *Leptospira* antibodies was associated with household environmental factors such as residence in flood-risk regions with open sewers (prevalence ratio [PR] 1.42, 95% CI 1.14–1.75) and proximity to accumulated refuse (1.43, 1.04–1.88), sighting rats (1.32, 1.10–1.58), and the presence of chickens (1.26, 1.05–1.51). Furthermore, low income and black race (1.25, 1.03–1.50) were independent risk factors. An increase of US\$1 per day in per capita household income was associated with an 11% (95% CI 5%–18%) decrease in infection risk.

### Conclusions

Deficiencies in the sanitation infrastructure where slum inhabitants reside were found to be environmental sources of *Leptospira* transmission. Even after controlling for environmental factors, differences in socioeconomic status contributed to the risk of *Leptospira* infection, indicating that effective prevention of *leptospirosis* may need to address the social factors that produce unequal health outcomes among slum residents, in addition to improving sanitation.

### Resumo português / Portuguese Abstract

Resumo traduzido para o português pelo Dr. Guilherme Ribeiro (Abstract translated into Portuguese by Dr. Guilherme Ribeiro).

### Author Summary

*Leptospirosis*, a life-threatening zoonotic disease, has become an important urban slum health problem. Epidemics of *leptospirosis* now occur in cities throughout the developing

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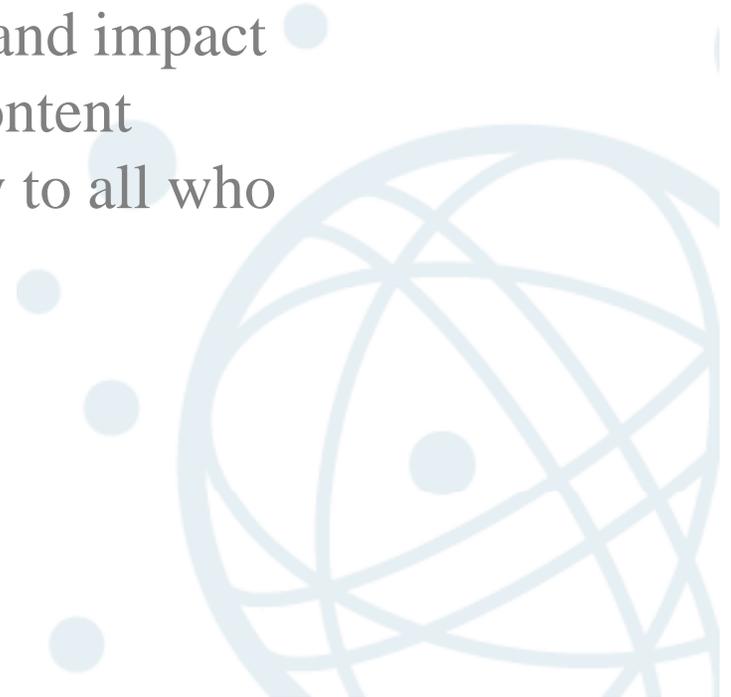
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