

MATTHEW H. BONDS
Research Associate in Social Medicine
Harvard Medical School

Department of Global Health and
Social Medicine
Harvard Medical School
Boston, MA USA
mhb9@hms.harvard.edu

Partners in Health
PO BOX 3432
Kigali, Rwanda
mbonds@pih.org

EDUCATION

2006-2008 Postdoctoral Fellowship, Earth Institute at Columbia University
(Mentor: Jeffrey Sachs)
2003-2006 Ph.D. Ecology, University of Georgia (Advisor: Pejman Rohani)
1999-2003 Ph.D. Economics, University of Georgia (Advisor: Dwight Lee)
1994-1998 B.A. Economics (Biology Minor), Francis Marion University, *Magna cum Laude*

RESEARCH EXPERTISE

Global Health and Economic Development, Environmental and Natural Resource Economics,
Ecology and Evolution of Infectious Diseases, Population Ecology, Productivity Analysis

RECENT EMPLOYMENT

07/2010 – Present Research Associate in Social Medicine, Department of Global Health
and Social Medicine, Harvard Medical School
10/2009 – Present Lecturer, National University of Rwanda School of Public Health
01/2009 – Present Adjunct Professor, French School of Public Health (EHESP)
09/2008 – 7/2010 Research Associate, François Xavier Bagnoud Center
for Health and Human Rights, Harvard School of Public Health
09/2006 – 8/2008 Earth Institute Fellow, Columbia University
08/2003 – 8/2006 Research Assistant, Institute of Ecology, UGA
05/2001 – 8/2002 Graduate Lecturer, Department of Economics, UGA
08/1999 – 5/2001 Teaching Assistant, Department of Economics, UGA

SCHOLARSHIPS, FELLOWSHIPS AND HONORS

2010 NIH International Research Scientist Career Development Award, K01
2006 Earth Institute Fellowship, Columbia University
2005 Sartain Lanier Foundation ARCS Fellowship
2005 Best Oral Presentation, Southeastern Ecology and Evolution
Conference
2004 ARCS Foundation Fellowship
2003 Eugene Odum Fellowship
2002 Political Economy Research Center Graduate Fellowship
1999 Ramsey Center for Private Enterprise Foundation Scholarship
1998 Political Economy Research Center Undergraduate Scholarship
1998 Tropical Ecology Scholarship, Pee Dee Sierra Club
1997 *Phi Kappa Phi*
1997 Francis Marion University Alumni Association Scholarship
1997 Sigma Phi Epsilon/Jay Williams Scholarship
1996 Knights of Columbus Scholarship
1996 Jay Boone Aiken Scholarship
1994 Francis Marion Elmore Memorial Scholarship

GRANTS

- 2004 *National Science Foundation, Human and Social Dynamics Grant.* “On Long-term Consequences of Selfish Behavior; A Game Theoretic Approach to Host-Pathogen Coevolution,” (with Pejman Rohani and Donald C. Keenan) \$100,000.
- 2009 *Doris Duke Charitable Foundation Population Health Implementation and Training Grant.* “Strengthening and Studying Community-Based, Integrated Primary Health Care Systems in Rural Rwanda.” (Coinvestigator; Co-PIs: Michael Rich and Paulin Basinga) \$8.5 million.
- 2010 *National Institutes of Health, International Research Scientist Career Development (K01) Award.* “The economic impacts of community-based integrated health care in rural Rwanda” (sole PI), \$669,470.

GRANTS PENDING

- 2011 *National Science Foundation, Economics.* “Collaborative Research: Computational and Empirical Analysis of Disease-Driven Poverty Traps in Rwanda” (PI, Co-PIs: Ann Miller and Megan Murray)

PEER REVIEWED PUBLICATIONS

Plucinski*, M., Ngonghala*, C.N., Getz, W. and M.H. Bonds, 2012. “Clusters of poverty and disease emerge in epidemiological network with community structure”, *in prep.*

Bonds, M.H., Dobson, A. F. and D.C. Keenan. 2012. “Disease ecology and the latitudinal gradient in income,” *PLoS Biology*, in revision.

Dhillon, R., Bonds, M.H., Fraden*, M., Ndahiro, D., Josh Ruxin. 2011. “The impact of removing financial barriers on utilization of a primary care facility in Rwanda” *Global Public Health*, in press.

Plucinski*, M., Ngonghala*, C.N., and M.H. Bonds, 2011. “Health safety nets can break cycles of poverty and disease: a stochastic ecological model.” *Journal of the Royal Society Interface*, doi:10.1098/rsif.2011.0153.

Bonds, M.H., D.C. Keenan, P. Rohani, and J. D. Sachs. 2010. “Poverty trap formed by the ecology of infectious diseases,” *Proceedings of the Royal Society, B*, 277:1185-1192.

Bonds, M.H., and P. Rohani. 2010. “Herd immunity acquired indirectly from interactions between the ecology of infectious diseases, demography, and economics,” *Journal of the Royal Society Interface*, 7:541-547.

Bonds, M.H. and J.J. Pompe. 2008. “Public land management and institutional reform: Evidence from Mississippi’s School Trust Land history,” *Southern Business and Economics Journal* 2:1-18.

Bonds, M.H. and D.R. Hughes. 2007. “On the productivity of public forests: a stochastic frontier analysis of school trust timber production,” *Canadian Journal of Agricultural Economics* 55: 171-183.

Bonds, M.H. 2006. “Host life-history strategy explains pathogen-induced sterility,” *The American Naturalist* 168: 433-444.

Bonds, M.H., D.C. Keenan, Leidner*, A., and P. Rohani. 2005. "Higher disease prevalence can induce greater sociality; a game theoretic coevolutionary model," *Evolution* 59(9): 1859-1866.

Bonds, M.H. and J. Pompe. 2005. "Improving institutional incentives for public land management; an econometric analysis of school trust land leases," *Journal of Institutional Economics* 1(2): 193-215.

Bonds, M.H. and J. Pompe. 2003. "Calculating wetland mitigation banking credits; adjusting for function and location," *Natural Resources Journal* 43(4): 961-977.

*denotes student working under my supervision

OTHER PUBLICATIONS AND TECHNICAL REPORTS

Report on Economic Core Metrics. 2010. African Health Initiative PHIT Data Collaborative, Doris Duke Charitable Foundation.

Bonds, M.H. 2008. "Notes from the Millennium Villages Project, Rwanda: Breaking the disease-driven poverty trap," *Consilience: The Journal of Sustainable Development* 1: 98-111.

Muhammed, A., M.H. Bonds, and D. Jack. 2007. "Climate Change and the Future of Pastoralism." Global Humanitarian Forum, Geneva.

Report on Men's Fertility Survey, Sauri, Kenya, Millennium Villages Project. 2007. Earth Institute at Columbia University, New York, NY.

Bonds, M.H. 2006. "Sociality, Sterility, and Poverty; Host-Pathogen Coevolution, with Implications for Human Ecology," Ph.D. Dissertation (Ecology), University of Georgia, Athens, GA.

Bonds, M.H. and M.A. Nachbahr. 2005. Review of End of Poverty; Economic Possibilities for Our Time, by Jeffrey Sachs, *Journal of the American Medical Association (JAMA)* 294: 1558.

Bonds, M.H. 2003. "An Economic Analysis of the Mississippi School [Land] Trust Program," Ph.D. Dissertation (Economics), University of Georgia, Athens, GA.

TEACHING EXPERIENCE

Lecturer, National University of Rwanda School of Public Health: Health Economics (MPH)(12/2009-1/2010)

Adjunct Professor, French School of Public Health: Global Environmental Change and Health Instructor and Co-Organizer, African BioMathematics Initiative: Workshop and Advanced Study Institute on Economic Epidemiology, Makerere University Kampala, Uganda (7/2009- 8/2009)

Graduate Instructor, UGA: Environmental and Natural Resource Economics (Fall 2002, Summer 2003), Principles of Macroeconomics (Summer 2001, Fall 2001, Spring 2002, Spring 2003)

Teaching Assistant, UGA: Environmental and Natural Resource Economics (Spring 2001), Mathematical Economics (Graduate Level) (Fall 2000), Principles of Microeconomics (2000), Law and Economics (Fall 1999), Money and Banking (Fall 1999)

SERVICE AND OUTREACH

Reviewer for: *The American Naturalist*, *Bulletin of Mathematical Biology*, *EcoHealth*, *Ecology Letters*, *Evolutionary Applications*, *Journal of Health Economics*, *Journal of Theoretical Biology*, *Integrative and Comparative Biology*, *PLoS Medicine*, *Proceedings of the Royal Society B*, *Journal of the Royal Society Interface*

Advisory Board: GiveWell.org

Pro Bono Consultations for: Millennium Villages Project Rwanda, Project Muso, The Maasai Wilderness Conservation Trust, Partners in Health
Steering Committee Member: RDHS-IV; Member of Technical Committee on Environmental Health and Social and Demographic Characteristics.
Moderator: Economics Core Metrics Working Group, Africa Health Initiative, Doris Duke Charitable Foundation 2009-present.
Coordinator: The Earth Institute Fellows Symposium; Spring 2007 and Fall 2007.
Coordinator: Earth Institute Fellows Working Group on the Millennium Villages

DISCUSSANT ON PANELS AND ROUNDTABLES

Research and Policy on Infectious Disease Dynamics (RAPIDD), Atlanta, Georgia, 03/2010
Africa Health Initiative Doris Duke Charitable Foundation, Lusaka, Zambia 10/2009
Challenges of the Drylands; Global Humanitarian Forum Geneva, Dubai, UAE 11/2007
Sustainable Development; Earth Institute at Columbia University, New York, NY 10/2007
The Contributions of Armen A. Alchian; Liberty Fund Conference, Emigrant, MT 10/2007
Markets, Freedom, and the Environment; PERC Colloquium, Bozeman, MT 6/2007
Poverty Alleviation; Earth Institute at Columbia University, New York, NY 5/2007
Biodiversity and Health Scope Meeting; *Diversitas*, Madison, WI 10/2006

INVITED PRESENTATIONS

Princeton University, Department of Ecology and Evolutionary Biology 9/2011
Harvard Medical School, Department of Global Health and Social Medicine 9/2011
Partners in Health, Boston, MA 7/2011
University of Washington, Institute of Health Metrics and Evaluation, Seattle, WA 4/2011
Harvard University, Department of Population and Development Studies, Cambridge, MA 4/2011
French School of Public Health, Paris, France, 1/2011
University of New Mexico, Program in Interdisciplinary Biological and BioMedical Sciences (PiBBs), 3/2010
French School of Public Health, Global Environmental Change and Health, Paris, France, 1/2010
Francis Marion University, Florence, SC 11/2009
Francois-Xavier Bagnoud Center for Health and Human Rights, Harvard School of Public Health, Boston, MA 11/2009
Africa Health Initiative, Doris Duke Charitable Foundation, Lusaka, Zambia 10/2009
Workshop on Economic Epidemiology, Makerere University, Kampala Uganda 8/2009
Centre de Recherche IRD, Infectious Disease Unit, Montpellier, France, 6/2008
Harvard Medical School, Department of Social Medicine, Boston, MA 12/2007
Columbia University, MVP Research Seminar Series, New York, NY 11/2007
Francis Marion University, Science Colloquium, Florence, SC 10/2007
Columbia University, Earth Institute Fellows Symposium, New York, NY 10/2007
Columbia University, Earth Institute Fellows Symposium, New York, NY 5/2007
Berry College, Department of Economics, Rome, GA, 4/2007
Consortium for Conservation Medicine, Madison WI 10/2006
University of Georgia, Institute of Ecology, Athens, GA, 7/2006
Ecological Society of America Annual Meeting, Memphis, TE, 8/2006
University of Leeds, Department of Integrated and Comparative Biology, UK, 11/2005
University of Sheffield, Department of Animal and Plant Sciences, UK, 11/2005
University of Cambridge, Department of Zoology, UK, 11/2005
Francis Marion University, School of Business, Florence, SC, 10/2005
National Science Foundation, Human and Social Dynamics, Arlington, VA, 10/2005
University of Georgia, Department of Economics, Athens, GA, 7/2003
Political Economy Research Center, Bozeman, Montana, 8/2002
Political Economy Research Center, Bozeman, Montana, 6/2002

CONFERENCE POSTERS AND ORAL PRESENTATIONS

Ecology and Evolution of Infectious Disease Annual Meeting, Santa Barbara, CA 6/2011

Ecology and Evolution of Infectious Disease Annual Meeting, Athens, GA 5/2009

Ecology and Evolution of Infectious Disease Annual Meeting, Fort Collins, CO 6/2008

University of Georgia, Biomedical Health Sciences Institute, Athens, GA, 9/2005

Ecological Society of America Annual Meeting, Montreal, Quebec, 8/2005

Southeastern Ecology and Evolution Conference, Athens, GA, 3/2005*

*Winner of Best Oral Presentation

REFERENCES

Paul Farmer, Presley Professor of Medical Anthropology, Harvard Medical School

Jeffrey D. Sachs, Quetelet Professor and Director, Earth Institute at Columbia University

Megan Murray, Associate Professor, Harvard School of Public Health

Pejman Rohani, Professor, Ecology and Evolutionary Biology, University of Michigan

Partha Dasgupta, FRS, Professor, Department of Economics, University of Cambridge