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EDUCATION

PhD University of Washington, Seattle, Economics (1999)
MPH University of Washington, Seattle, Epidemiology (1999)
BE Birla Institute of Technology & Science, Pilani, India, Instrumentation (1992)

CURRENT POSITIONS

Director & Senior Fellow Center for Disease Dynamics, Economics & Policy (2009-present)
Senior Research Scholar & Lecturer Princeton University (since 2014), Research Scholar (2011-14), Associate Research Scholar (2009-10), Visiting Scholar (2007-09)
Affiliate Professor University of Washington (2012-present)
Senior Associate Johns Hopkins Bloomberg School of Public Health (2014-present), Associate (2005-07)
Series Editor Disease Control Priorities in Developing Countries, 3rd Edition
Visiting Professor University of Kwazulu-Natal (2016-present)
Co-founder HealthCubed (2016-present)

PAST APPOINTMENTS

Visiting Professor University of Strathclyde (2014-2017)
Distinguished Professor Public Health Foundation of India (2015-16)
Vice-President, Research & Policy Public Health Foundation of India (2011-2015)
Senior Fellow Resources for the Future, Washington DC (2006-2010), Fellow (1999-2005)
Adjunct Professor Paul H. Nitze School of Advanced International Studies (SAIS), Johns Hopkins University (2003-2010)
Adjunct Professor Krieger School of Arts and Sciences, Johns Hopkins University (2001-2004)
Visiting Professor Dept. of Interdisciplinary Arts and Sciences, University of Washington, Bothell (1998-1999)

Consultant World Health Organization (1999-present), Centers for Disease Control and Prevention (2002, 2005-06), Center for International Development, Harvard University (2000-01), World Bank (1997, 2004-present), Population Reference Bureau (2005-2007), University of Toronto (2006-present), United Nations Environment Programme (2010).

BOOKS AND REPORTS

1. Sumanth Gandra, Jyoti Joshi, Anna Trett, Anjana Sankhil Lamkang, **Ramanan Laxminarayan**. *Scoping Report on Antimicrobial Resistance in India*. Washington, DC: Center for Disease Dynamics, Economics & Policy, 2017.
2. Raykar, N., M. Majumdar, **R. Laxminarayan**, P. Menon, *India Health Report: Nutrition 2015*, Public Health Foundation of India, 2015.
3. Gelband, H., M. Miller-Petrie, S. Pant, S. Gandra, D. Barter, J. Levinson, S. A. White, **R. Laxminarayan**, *The State of the World's Antibiotics, 2015*, Center for Disease Dynamics, Economics and Policy, 2015.
4. **Laxminarayan, R.**, T. Van Boeckel and A. Teillant (2015), "The Economic Costs of Withdrawing Antimicrobial Growth Promoters from the Livestock Sector", *OECD Food, Agriculture and Fisheries Papers*, No. 78, OECD Publishing. <http://dx.doi.org/10.1787/5js64kst5wvl-en>, 2015.
5. Rao-Seshadri, S., P. Jha and **R. Laxminarayan**. *The Karnataka Health Action Plan: A Roadmap to Improved Health*, University of Toronto and Public Health Foundation of India, New Delhi, 2015.
6. **Laxminarayan, R.** and M. Macauley, *The Value of Information: Methodological Frontiers and New Applications in Environment and Health*, Springer, 2012.
7. P. Jha and **R. Laxminarayan**, *Choosing Health in India*, University of Toronto and Resources for the Future, New Delhi, 2009.
8. **Laxminarayan, R.** J. Chow, E. Klein, P. Whitacre, *Closing India's Nutrition Gap: The Role of Golden Mustard in Fighting Vitamin A Deficiency*, Resources for the Future, Washington DC 2007.
9. **Laxminarayan, R.**, A. Malani, *Extending the Cure: Policy Responses to the Growing Threat of Antibiotic Resistance*, Resources for the Future, Washington DC 2007.
10. **Laxminarayan, R.**, ed. *Battling resistance to antibiotics and pesticides: An economic approach*, RFF Press, Washington DC, 2002.

JOURNAL ARTICLES

1. Klein, E.Y., T. van Boeckel, E.M. Martinez, S. Pant, S. Gandra, S.A. Levin, H. Goossens, **R. Laxminarayan**, "Global increase and geographic convergence in antibiotic consumption between 2000 and 2015" Proceedings of the National Academy of Sciences, Forthcoming.
2. Megidido, I., E.Y.Klein, **R. Laxminarayan**, ""Potential impact of introducing the pneumococcal conjugate vaccine in India's National Immunization Programme: an economic-epidemiological analysis" BMJ Global Health, Forthcoming.
3. Nandi, A., S. Kinra, J. Behrman, **R. Laxminarayan**, "Early-Life Nutrition is Associated Positively with Schooling and Labor Market Outcomes and Negatively with Marriage Rates at Age 20-25 Years: Evidence from the Andhra Pradesh Children and Parents Study (APCAPS) in India" Journal of Nutrition, Forthcoming.
4. Chatterjee, S., P. Das, A. Nigam, A. Nandi, L. Brenzel, A. Ray, P. Haldar, M.K. Aggarwal, **R. Laxminarayan**, "Routine Immunization Service Delivery in India: Variation in Cost and Performance" BMJ Global Health, Forthcoming.
5. Schar, D., A. Sommanustweechai, **R. Laxminarayan**, V. Tangcharoensathien, "Surveillance of Antimicrobial Consumption in Low- and Middle-Income Country Animal Production Sectors: A Foundation for Optimizing Use and Addressing Antimicrobial Resistance" PLOS Medicine, Forthcoming.
6. Chatterjee, S., P. Das, **R. Laxminarayan**, "Determinants of cost of routine immunization programme in India" Vaccine, Forthcoming.
7. Nandi, A., J. Behrman, **R. Laxminarayan**, "The Impact of a National Early Childhood Development Program on Future Schooling Attainment: Evidence from the ICDS in India" Economic Development and Cultural Change, Forthcoming.
8. Logan L.K., S. Gandra, R.A. Weinstein, **R. Laxminarayan**, "*Acinetobacter baumannii* Resistance Trends in Children in the United States, 1999-2012, Journal of the Pediatric Infectious Diseases Society, Forthcoming.
9. Gandra, A., G. Alvarez-Uria, S. Murki, S.K. Singh, R. Kanithi, D.R. Jinka, A.K. Chikkappa, S. Subramanian, A. Sharma, D. Dharmapalan, H. Kandraj, A.K. Vasudevan, O. Tunga, A. Akula, Y. Hsia, M. Sharland, **R. Laxminarayan**, "Point Prevalence Surveys of Antimicrobial Use among eight Neonatal Intensive Care Units in India: 2016" Int J. Infectious Dis., Forthcoming.
10. Van Boeckel, T.P. E.E. Glennon, D. Chen, M. Gilbert, T.P. Robinson, B.T. Grenfell, S.A. Levin, S. Bonhoeffer, **R. Laxminarayan**, "Reducing antimicrobial use in food animals", Science, September 29; 357(6358): 1350-1352, 2017.

11. Nandi, A., I. Megiddo, A. Ashok, A. Verma, **R. Laxminarayan**, “Reduced Burden of Childhood Diarrheal Diseases through Increased Access to Water and Sanitation in India: A Modeling Analysis”, *Social Science and Medicine*, May; 180: 181-192, 2017.
12. Alvarez-Uria, G., S. Gandra, S. Mandal, **R. Laxminarayan**, “Forecast of global antimicrobial resistance of *Escherichia coli* and *Klebsiella pneumoniae* in invasive isolates: a population weighted mixed linear mathematical model” *International Journal of Antimicrobial Agents*, September 1; 50: S79-S80, 2017.
13. Fuster, V., J. Frazer, M. Snair, R. Vedanthan, V. Dzau, G. Abbam, A. Batson, F. Burkle, L. Chin, L.H. Fernald, S. Ferguson, P. Lamptey, **R. Laxminarayan**, M. Merson, V. Narasimhan, M. Osterholm, J.C. Puyana. “The Future Role of the United States in Global Health” *Journal of the American College of Cardiology*, December 26; 70 (25): 3140-3156. doi: 10.1016/j.jacc.2017.11.009, 2017.
14. **Laxminarayan, R.**, M. Kakkar, P. Horby, N. Malavige, B. Basnyat, “Emerging and re-emerging infectious disease threats in South Asia: status, risk factors, preparedness and outlook” *British Medical Journal*, April 11; 357: j1447, 2017.
15. Stacey, N., A. Summan, A. Tugendhaft, **R. Laxminarayan**, K. Hofman, “Simulating the impact of excise taxation for disease prevention in low-income and middle-income countries: an application to South Africa ” *BMJ Global Health*, January 5. doi: 10.1136/bmjgh-2017-000568, 2018.
16. Gandra, S., A. Trett, E. Klein, **R. Laxminarayan**, “Is Antimicrobial Resistance a Bigger Problem in Tertiary Care Hospitals than in Small Community Hospitals in the United States?” *Clinical Infectious Diseases*, May 4. doi: 10.1093/cid/cix413, 2017.
17. Dugani, S., **R. Laxminarayan**, N. Kissoon, “The Quadruple Burden of Sepsis” *Canadian Medical Association Journal*, September 11; 189 (36): E1128-E1129. doi: 10.1503/cmaj.171008, 2017.
18. Nandi, A., R. Lutter, **R. Laxminarayan**, “Breastfeeding duration and adolescent educational outcomes: Longitudinal evidence from India,” *Food and Nutrition Bulletin*, Dec;38(4):528-541, 2017.
19. Gandra, S., S. K Singh, D.R. Jinka, R. Kanithi, A.K Chikkappa, A. Sharma, D. Dharmapalan, A.K. Vasudevan, O.Tunga, A. Akula, G. Garg, Y. Hsia, S. Murki, G. Alvarez-Uria, M. Sharland, **R. Laxminarayan**, “Point Prevalence Surveys of Antimicrobial Use among Hospitalized Children in Six Hospitals in India in 2016” *Antibiotics*, Sep 13;6(3), 2017.
20. Klein, E.Y. N. Mojica, W. Jiang, S.E. Cosgrove, E. Septimus, D. J. Morgan, **R. Laxminarayan**, “Trends in Methicillin-Resistant *Staphylococcus aureus* Hospitalizations in the United States, 2010–2014” *Clinical Infectious Diseases*, 65 (11), 13 November 2017, 1921–23, 2017.

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25. Pandey, S., V. Chadha, **R. Laxminarayan**, N. Arinaminpathy, "Estimating tuberculosis incidence from primary survey data: a mathematical modeling approach" Int J. TB and Lung Dis., 21 (4): 366-374, 2017.
26. Logan, L.K., S. Gandra, S. Mandal, E.Y. Klein, J. Levinson, R.A. Weinstein, **R. Laxminarayan**, "Multi-drug and Carbapenem-Resistant *Pseudomonas aeruginosa* in Children, United States, 1999-2012" Journal of the Pediatric Infectious Diseases Society, November 24; 6 (4): 352-359. doi: 10.1093/jpids/piw064, 2017.
27. Ghosh, A., **R. Laxminarayan**, "Demand- and Supply-side Determinants of Nonvaccination with and Dropout from Diphtheria-Pertussis-Tetanus Vaccination in Rural India" Vaccine, 35 (7): 1087-1093, 2017.
28. Mandal, S., V. K Chadha, **R. Laxminarayan**, N. Arinaminpathy, "Counting the lives saved by DOTS in India: a model-based approach", BMC Medicine, March 3; 15:47, 2017.
29. Al-Tawfiq, J., **R. Laxminarayan**, M. Mendelson, "How should we respond to the emergence of plasmid-mediated colistin-resistance in humans and animals?" International Journal of Infectious Diseases, 54:77-84, 2017.
30. **Laxminarayan, R.**, Z. Bhutta, "Antimicrobial resistance – a threat to neonate survival" Lancet Global Health, 4(10):e676-7, 2016.
31. **Laxminarayan, R.**, D. Sridhar, M. Blaser, M. Wang, M. Woolhouse, "Achieving Global Targets for Antimicrobial Resistance" Science, 353(6302):874-5, 2016.

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33. **Laxminarayan, R.**, C.F. Amábile-Cuevas, O. Cars, T. Evans, D. Heymann, S. Hoffman, A. Holmes, M. Mendelson, D. Sridhar, M. Woolhouse, J.A. Rottingen, "The UN High-Level Meeting on Antimicrobial Resistance: A Historical Opportunity to Ensure Sustainable Access to Effective Antimicrobials" Lancet, 388, 218-220, 2016.
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36. Chatterjee S., M. Pant, P. Haldar, M. K. Aggarwal and **R. Laxminarayan** "Current costs and projected financial needs of India's universal immunization programme" Indian Journal of Medical Research, 143(6):801-8, 2016.
37. Nandi, A., A. Ashok, S. Kinra, J. Behrman, **R. Laxminarayan**, "Early Childhood Nutrition Is Positively Associated with Adolescent Educational Outcomes: Evidence from the Andhra Pradesh Child and Parents Study (APCAPS)", Journal of Nutrition, April 1; 146 (4): 806–813. doi: 10.3945/jn.115.223198, 2016.
38. Robinson T.P., D.P.Bu, J. Carrique-Mas, E.M.Fèvre, M.Gilbert, D. Grace, S.I.Hay, J. Jiwakanon, M. Kakkar, S. Kariuki, **R. Laxminarayan**, J. Lubroth, U. Magnusson, P.Thi Ngoc, T.P. Van Boeckel, M.E.J. Woolhouse, "Antibiotic resistance: Mitigation opportunities in livestock sector development", Animal, 11 (1): 1-3, 2017.
39. Robinson T.P., D.P.Bu, J. Carrique-Mas, E.M.Fèvre, M.Gilbert, D. Grace, S.I.Hay, J. Jiwakanon, M. Kakkar, S. Kariuki, **R. Laxminarayan**, J. Lubroth, U. Magnusson, P.Thi Ngoc, T.P. Van Boeckel, M.E.J. Woolhouse, "Antibiotic resistance is the quintessential One Health issue", Transactions of the Royal Society of Tropical Medicine and Hygiene, 110(7):377-80, 2016.
40. **Laxminarayan, R.** R.R. Choudhury, "Antibiotic resistance in India: Out of the ordinary?" PLOS Medicine, 3(3):e1001974, 2016.
41. Klepac, P., I. Megiddo, B. Grenfell, **R. Laxminarayan**, "Self-enforcing agreements in international vaccination strategies" Journal of the Royal Society Interface, 13(114):20150907, 2016.
42. Chatterjee, S., **R. Laxminarayan**, R. Gosselin, "Cost per DALY averted in a surgical unit of a private hospital in India" World Journal of Surgery, 40(5):1034-40, 2016.

43. Nandi, A., A. Colson, A. Verma, I. Megiddo, A. Ashok, **R. Laxminarayan**, "Health and Economic Benefits of Scaling Up a Home-Based Neonatal Care Package in Rural India: A Modeling Analysis" Health Policy and Planning, 31(5): 634-44, 2016.
44. Kelesidis T., Braykov, N.P., D. Morgan, M.L. S. Gandra, Schweizer, D. Z. Uslan, , S.A. Weisenberg, B. Johannsson, H. Young, J. Cantey, A. Srinivasan, E. Perencevich, E. Septimus, **R. Laxminarayan**, "Indications and Types of Antibiotic Agents Used In Six Acute-Care Hospitals" Infection Control and Hospital Epidemiology, 37(1):70-9, 2016.
45. Avula R, Raykar N, Menon P, **Laxminarayan R**. Reducing stunting in India: what investments are needed? Maternal & Child Nutrition 2:249-52, 2016.
46. Gandra, S., N. Mojica, E.Y. Klein, A. Ashok, V. Nerurkar, M. Kumari, U. Ramesh, S. Dey, V. Vadwai, B.R. Das, **R. Laxminarayan**, "Trends in antibiotic resistance among major bacterial pathogens isolated from blood cultures tested at a large private laboratory network in India, 2008–2014" International Journal of Infectious Disease, 50:75-82, 2016.
47. Megiddo, I., A. Colson, D. Chisholm, T. Dua, **R. Laxminarayan**, "Health and Economic Benefits of Public Financing of Epilepsy Treatment in India: An Agent-Based Simulation Model", Epilepsia, 57(3):464-74, 2016.
48. Gandra, S., A. Merchant, **R. Laxminarayan**, "A role for private sector laboratories in public health surveillance of antimicrobial resistance", Future Microbiology, 11:709-12, 2016.
49. Gandra, S., E.Y. Klein, S. Pant, S. Malhotra-Kumar, **R. Laxminarayan**, "Faropenem Consumption is Increasing in India" Clinical Infectious Diseases, 62(8):1050-2, 2016.
50. **Laxminarayan, R.** "Global Commons in Infectious Diseases" Oxford Review of Economics and Policy, 32(1), 88–101, 2016.
51. Nandi, A., **R. Laxminarayan**, "The Unintended Consequences of India's Safe Motherhood Scheme: Does the Janani Suraksha Yojana Induce Population Growth?" Journal of Population Economics, 29 (2), 457-491, 2015.
52. **Laxminarayan, R.**, P. Matsoso, S. Pant, C. Brower, D. Barter, K. Klugman, S. Davies, "Effective Antimicrobials: Securing human and animal health," Lancet, Nov 17, 2015.
53. Van Boeckel, T.P., C. Brower, M. Gilbert, B.T. Grenfell, S.A. Levin, T.P. Robinson, A. Teillant, **R. Laxminarayan**, "Global antimicrobial use in food animals" Proceedings of the National Academy of Sciences, 112(18): 5649-54, 2015.
54. Teillant, A., S. Gandra, D. Barter, D.J. Morgan, **R. Laxminarayan**, "Potential Burden of Antibiotic Resistance on Surgeries and Cancer Chemotherapy Antibiotic Prophylaxis in the United States" Lancet Infectious Diseases, 15(12): 1429-37, 2015.

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57. Colson, A., S. Adhikari, A. Sleemi, **R. Laxminarayan**, “Quantifying uncertainty in intervention effectiveness with structured expert judgment: an application to obstetric fistula” BMJ Open, Jun 3, 5(6), 2015.
58. Roca I., M. Akova, F. Baquero, J. Carlet, M. Cavaleri, S. Coenen, J. Cohen, D. Findlay, I. Gyssens, O.E. Heur, G. Kahlmeter, H. Kruse, **R. Laxminarayan**, E. Liébana, L. López-Cerero, A. MacGowan, M. Martins, J. Rodríguez-Baño, J.M. Rolain, C. Segovia, B. Sigauque, E. Tacconelli, E. Wellington, J. Vila, “The global threat of antimicrobial resistance: science for intervention” New Microbes New Infect Apr 16; 6:22-9, 2015.
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70. Megiddo, I., S. Chatterjee, A. Nandi, **R. Laxminarayan**, “Cost-effectiveness of treatment and secondary prevention of acute myocardial infarction in India,” Global Heart, 9(4): 391-398, 2014.
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Lancet, May; 2(5):e251-2, 2014.

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9. **Laxminarayan, R.**, C. Fischer, "Congestion and the Commons: What Happens When Some Resources Are Enclosed and Others Are Open Access?" Resources **173** (Fall): 16-18 2009.
10. **Laxminarayan, R.**, J. Chow, E. Klein, and P.T. Whitacre, "A Recipe to Fight Vitamin A Deficiency in India: Add Mustard and Stir?" Resources **167** (Fall/Winter): 2008.
11. **Laxminarayan, R.**, "Malaria among African Children: Hope for Progress Against a Growing Menace" Resources **148** (Winter): 25-28, 2006.
12. **Laxminarayan R.** "A Sustainable Malaria Treatment Strategy for the 21st Century", SciDev.Net, Portfolio on Malaria (www.scidev.net)
13. **Laxminarayan, R.**, C. Fischer, "Keeping One Row Ahead of the Bugs: The Economics of Pest Resistance to Transgenic Crops" Resources **146** (Fall/Winter): 5-8, 2004.
14. **Laxminarayan, R.**, Antibiotic resistance: an emerging environmental health threat, RFF Issues Brief 02-19, 2002.
15. **Laxminarayan, R.**, "Fighting antibiotic resistance: Can economic incentives play a role?" Resources **143** (Spring): 9-12, 2001.
16. **Laxminarayan, R.**, "Economic consequences of red tides," Red Tides. National Oceanic and Atmospheric Administration (NOAA): Autumn 2000.
17. **Laxminarayan, R.**, "Public participation in environmental decision-making: The role of NGOs" Proceedings of RFF-ISEP Workshop on Public Participation in Environmental Decision-making, Bangkok, Apr. 2000.

WORKING PAPERS

1. "Valuing smoke free laws" (with Shawn Magnuson, Ashvin Ashok and Juha Siikamaki) Submitted.
2. "Transboundary Benefits of Controlling Multidrug-Resistant Tuberculosis" (with Eili Klein)
3. "Changing epidemiology of *Staphylococcus aureus*-related Infections in Hospital-born Neonates, 1999-2009" (with Eili Klein and Nalini Singh)

4. “Transmission Dynamics of Multistrain Bacterial Pathogens” (with Itamar Megiddo, Eili Klein and David L. Smith) (submitted to Plos ONE)
5. “Transboundary Malaria Financing” (with Dave Smith)
6. “Replenishing antibiotic effectiveness: is there a role for government?” (with John Powers)
7. “Hospital Financial Characteristics and Rates of Central Line-Associated Bloodstream Infection” (with Mike Eber)
8. “Surveillance and reporting of emerging pathogens” (with Eili Klein, Anup Malani and Alison Galvani)
9. “Malaria, Adaptation and Crop Choice” (with Klaus Moeltner)

RESEARCH GRANTS

Vaccine Economics and Health Resource Needs Assessment for India, BMGF, \$1,484,266 (2017-20) PI

Value of Vaccines in Preventing AMR, Harvard University, \$600,000 (2018-20) PI

Communication support to Mission Indradhanush in collaboration with ITSU, BMGF, \$700,000 (2015-17) PI

ResistanceMap Project, BMGF, \$700,000 (2015-16) PI

Global Antibiotic Resistance Partnership: Phase 2, Bill & Melinda Gates Foundation, Seattle, \$1,500,000 (2015-17) PI

Research to Support Universal Health Coverage, DfID, \$3.2 million (2013-16) PI.

Immunization Technical Support Unit, BMGF, \$7.8 million (2013-16) PI.

Fiscal Policies to Improve Health, BMGF, \$1.3 million (2013-16), PI.

Transform Nutrition, DfID, UK, Sub-grant from the International Food Policy Research Institute, \$650,000 (2011-16) PI

Global Antibiotic Resistance Partnership: Phase 2, Bill & Melinda Gates Foundation, Seattle, \$3,200,000 (2011-14) PI

Landscape Survey of Research Study Sites in India: Bill & Melinda Gates Foundation, \$110,000 (2012) PI

Global Forum on Bacterial Infections: Bill & Melinda Gates Foundation, \$300,000 (2011-12) PI

Disease Control Priorities Network: Bill & Melinda Gates Foundation, Sub-grant from the University of Washington, \$3,700,000 (2011-15) PI

Measuring the Impact of Foundation Giving – Phase 2, Robert Wood Johnson Foundation, \$800,000 (2010-12) PI

Transboundary Malaria Financing Models, Bill & Melinda Gates Foundation, Sub-grant from University of Florida, \$660,000 (2008-11) PI

Global Antibiotic Resistance Partnership: Phase 1, Bill & Melinda Gates Foundation, Seattle, \$2,100,000 (2008-11) PI

Consultative Forum on the Affordable Medicines Facility on Malaria, Bill & Melinda Gates Foundation, Seattle, \$494,000 (2008-09) PI

Measuring the Impact of Foundation Giving – Phase 1, Robert Wood Johnson Foundation, \$344,000 (2008-09) PI

Extending the Cure: Policy Research to Address Antibiotic Resistance Robert Wood Johnson Foundation, \$1,798,500 (2007-10) PI

Shaping the Antimalarial Subsidy Bill & Melinda Gates Foundation, Seattle, \$678,000 (2007-08) PI

Using Genetically Modified Crops to Address Micronutrient Deficiencies International Center for Tropical Agriculture (CIAT), Colombia, \$208,000 (2006-07) PI

Systemic Changes to Tackle Antibiotic Resistance, Robert Wood Johnson Foundation, \$348,000 (2005-07) PI

Reforming Alcohol Taxes: Health and Fiscal Issues, Robert Wood Johnson Foundation, \$100,000 (2005-06) Co-PI (with Ian Parry)

Reforming Alcohol Taxes: Health and Fiscal Issues, National Institute of Alcohol Addiction and Abuse, \$100,000 (2005-06) Co-PI (with Ian Parry)

Principal Investigator, Grants (263-MD-310352; 263-MD-408779; 263-MD-503186) from National Institutes of Health, Fogarty International Center, Disease Control Priorities Project. \$431,000 (2003-2007)

Co-Principal Investigator, Grant (R21 TW006548-01) from National Institutes of Health, Fogarty International Center, Reducing SO₂ emissions in Taiyuan, China. \$228,000 (2003-2006)

Principal Investigator, Grant (HS10943) from Agency for Healthcare Research and Quality (AHRQ), Conference on Economics of Resistance. \$28,000 (2000-2002)

Principal Investigator, Grant from Resources for the Future, Economics of Drug Resistance. \$75,000 (2001-2002)

Principal Investigator, Grant from Resources for the Future, Managing Transgenic Crops for Resistance and Biodiversity. \$140,000 (1999-2002)

FELLOWSHIPS/AWARDS

Alfred P. Sloan Dissertation Fellowship (1998-99)
Grover and Creta Ensley Fellowship for Public Policy (1998)
Hewlett Fellowship (1997)
Harborview Medical Center Research Grant (1997)

PROFESSIONAL SERVICE

Peer-reviewed Journals

Editor, International Journal of Infectious Disease (2017)
Editorial Board, Global Heart Journal (2011-present)

Referee

Journal of Political Economy, Economic Journal, Lancet, Lancet Global Health, Lancet Infectious Diseases, Science, RAND Journal of Economics, Journal of Environmental Economics and Management, Proceedings of the National Academy of Sciences, Proceedings of the Royal Society Phil Trans, Environmental and Resource Economics, Environment and Development Economics, Journal of Agricultural and Resource Economics, Marine Resources Economics, B.E. Journals in Economic Analysis, Social Science and Medicine, Tropical Medicine and International Health, Health Policy, Health Affairs, BMJ Open, Bulletin of the World Health Organization, European Journal of Health Economics, Air Quality, Atmosphere and Health, Ashgate Publishers, Swiss National Science Foundation, Social Sciences and Humanities Research Council of Canada, Wellcome Trust, UK, European Science Research Council, Vaccine.

Advisory Group/Committee Memberships

Vaccine Investment Strategy Committee, Gavi Alliance (2017-present)

Voting member, US Presidential Advisory Council on Combating Antibiotic-Resistant Bacteria (2015-present)

Governing Council, International Society for Infectious Diseases (2016-present); Executive Council (2014-2016); Chair, National Organizing Committee, 17th International Congress on Infectious Diseases, Hyderabad (2015-16).

Central Advisory Board of BioSPACE, a Policy Center for Biomedical Research (2014-present)

Governing Council, Consultancy Development Centre, Department of Scientific and Industrial Research, Government of India (2012-2016)

Scientific Advisory Committee, Worldwide Antimalarial Resistance Network (2011-present)

Advisory Board, Postdoctoral Fellowship Awards in Studying Complex Systems, James S. McDonnell Foundation (2012-present)

External Scientific Advisory Committee, University of California Global Health Institute (2010-present)

Antimicrobial Resistance Working Group, US President's Council on Science and Technology (2014)

Institute of Medicine Committee on *USAID Standing Committee on Strengthening Health Systems* (2014-2016)

External Advisory Board, University of Washington Department of Global Health (2013-2014)

PSI ACTWatch Advisory Group (2008-present)

WHO Quantitative Immunization and Vaccines Related Research Expert Advisory Group (QUIVER) (2007-2011)

Institute of Medicine Committee on *Achieving Sustainable Global Capacity for Surveillance and Response to Emerging Diseases of Zoonotic Origin* (2008-09)

Global Fund AMFm Copayment Technical Advisory Group (2008-09)

Roll Back Malaria ACT Subsidy Task Force (2007)

Roll Back Malaria Finance and Resources Working Group (2006-2009)

CDC Alcohol Related Disease Impact (ARDI) Working Group (2005-06)

National Academy of Sciences/Institute of Medicine Review Panel on *Malaria Control: A Reconsideration of the Role of DDT* (2004)

Institute of Medicine Committee on *Economics of Antimalarial Treatments* (2002-2004)

World Health Organization Task Force on Drug Resistance and Policies for Malaria (WHO-TDR-RAP) (2000-2002)