

RESUME

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Personal:

Education:

Ph.D., Interdisciplinary Ph.D. Program in Business, Engineering, and Public Affairs;
University of Texas at Austin, 1980. Ford Foundation Dissertation Grant Award.
M.Sc., Economics, London School of Economics and Political Science, 1978.
M.P.A., Lyndon B. Johnson School of Public Affairs, University of Texas at Austin, 1976.
A.B., Economics, Brown University, 1972. Brown University Fellowship.

Professional Experience:

Professor, Departments of Environmental Sciences & Engineering, and City & Regional Planning; University of North Carolina at Chapel Hill. (on the faculty of the UNC-CH since 1981).

Professor (part-time) Manchester Business School, Innovation, Management, and Policy Division. United Kingdom. Appointed in 2007.

Visiting Professor. Lee Kwan Yew School of Public Policy. National University of Singapore. 2015-2016.

Honorary Visiting Professor. Department of Economics. Gothenburg University. Sweden. 2012-13.

Visiting Professor, Department of Urban Studies and Planning. Massachusetts Institute of Technology. Spring semesters, 1997 and 1998.

Consultant (long term), Infrastructure and Urban Development Department, The World Bank. September 1988-January 1990.

Visiting Fulbright Lecturer, Institut fur Rammordnung, Economics University of Vienna. April 1988.

Visiting Professor, Dipartimento di Electronica, Politecnico di Milano, Spring 1984.

Fulbright Scholar, Institute of Environmental Studies, University of Khartoum, Sudan. Fall 1983.

Visiting Assistant Professor, School of Environmental and Public Affairs, Indiana University, Summer 1982.

Water Resources Systems Analyst, Egyptian Academy of Scientific Research and Technology, Lake Nasser-River Nile Research Project. September 1977-August 1980.

Consultant, Ford Foundation. Cairo Field Office, 1977-1980.

Assistant Instructor, Department of Economics, University of Texas at Austin, 1978-1979.

International Institute for Applied Systems Analysis. Vienna, Austria. IIASA Soviet-American Graduate Student Exchange Program, Summer 1977. Ford Foundation Grant.

Staff Economist, National Commission on Water Quality, United States Congress. September 1973-August 1975.

Management Analyst, U.S. General Accounting Office, June 1973-August 1973.

Administrative Experience

Director of the Environmental Management and Policy Program, Department of Environmental Sciences and Engineering, 1995-2002; Acting Chairman, Public Policy Analysis Program. (Undergraduate Curriculum), University of North Carolina at Chapel Hill (UNC-CH). 1986-1988.

UNC Project Director, USAID-funded Water and Sanitation for Health Project (WASH). August 1986-July 1988.

Program Director. Masters in Regional Planning Concentration in "Planning in Developing Areas." Department of City & Regional Planning. UNC-CH. 1987-88.

Co-Director. World Bank Water Demand Research Team. Project on Household Demand for Improved Water Supplies in Rural Areas of Developing Countries. 1988-1990.

Co-Coordinator. Hubert Humphrey Fellowship Program. UNC-CH. 1990-1991.

Selected Recent and On-going Activities

Chair of the Board, Environment for Development Network. Department of Economics, Gothenburg, Sweden. Appointed October, 2014.

Technical Committee, Global Water Partnership (GWP). Stockholm, Sweden. 2010-2015.

OECD-GWP Task Force on the Economics of Water Security. Appointed in 2013.

Advisor to the President, ArRiyadh Development Authority. May, 2012. Saudi Arabia.

National Research Council, Water and Technology Board. Committee member for study entitled, "Assessment of Water Reuse as an Approach for Meeting Future Water Supply Needs." 2008-2012.

Lead author for Water and Sanitation Challenge paper, Copenhagen Consensus II Project. 2007- 2008. Copenhagen, Denmark.

Member of International "Blue Ribbon" Panel on Strategic Assessment of the Investment Options for the Eastern Nile Council of Ministers. ("Nile Basin Scoping Study Team").

Member of World Bank Ganges Strategic Assessment Team. 2008-2012.

Consultant to the Hopi Tribe in the adjudication of the water rights to the Little Colorado River, before the Supreme Court of Arizona. 2003-2010.

Research Advisor – Economy and Environment Program for Southeast Asia –EEPSEA. (Singapore). 1998-present.

Research Advisor - Latin American and Caribbean Environmental Economics Program - LACEEP. (Turrialba, Costa Rica). 2006-present.

Research Advisor – Center for Environmental Economics and Policy Analysis - CEEPA. (Pretoria, South Africa). 2009-2014.

Research Advisor - Middle East and North Africa Environmental Economics Program - MENA. (Cairo, Egypt). 2009-2014.

Consultant, Eastern Nile Technical Regional Office. Addis Ababa, Ethiopia.

Consultant, World Bank, Nile Basin Initiative. Washington D.C.

Consultant, PATH. Seattle, Washington.

PhD Students Supervised (Chair of Doctoral Committee)

1. Xinming Mu. (1988). Department of City & Regional Planning, UNC-CH. Dissertation title: "Modeling Rural Water Demand Behavior: A Study of the Contingent Valuation Method."

Investment banker and entrepreneur. New Jersey, USA. (formerly Assistant Professor at the Lyndon Baines Johnson School of Public Affairs, University of Texas at Austin).

2. KyeongAe Choe. (1994). Department of City & Regional Planning, UNC-CH. Dissertation title: "Assessing the Accuracy of the Contingent Valuation Method for Valuing Improved Urban Infrastructure in the Context of a Developing Country." Deceased. Formerly Natural Resources Sector Manager, Asian Development Bank. Manila, Philippines.
3. Elizabeth McClelland. (1997). Department of City & Regional Planning, UNC-CH. Dissertation title: "The Use of Attitudinal Indicators in Contingent Valuation Research: A Test of Validity and Theoretic Compatibility." Deceased. Formerly Staff Economist, United States Environmental Protection Agency.
4. Wang Hua. (1997). Department of Environmental Sciences and Engineering, UNC-CH. Dissertation title: "Contingent Valuation of Environmental Resources: A Stochastic Perspective." Dean of School of Environmental Managements, Remin University, Beijing. Former Senior Economist, Research Department, The World Bank, Washington D.C.
5. Jennifer A. Davis. (1998). Department of Environmental Sciences and Engineering, UNC-CH. Dissertation title: "Assessing Community Preferences for Development Projects: Does Mode Matter? An Application of Household, Intercept, Telephone, and Focus Group Interview Methods." Associate Professor, Department of Civil and Environmental Engineering. Stanford University. Palo Alto, California. USA.
6. Julian Lampietti. (1999). Department of Public Policy, UNC-CH. Dissertation title: "Assessing Preferences for Health Care: Willingness to Pay for Malaria Prevention in Northern Ethiopia." Senior Economist. World Bank, Washington D.C. USA
7. Christine Poulos. (2000). Department of Public Policy, UNC-CH. Dissertation title: "Three essays on nonmarket valuation in less developed countries." Senior Environmental Economist. Research Triangle Institute, Research Triangle Park, N.C. USA
8. Wu Xun. (2000). Department of Public Policy, UNC-CH. "Game-theoretical approaches to water conflicts in international river basins -- A case study of the Nile Basin." Professor, and Director, Institute of Public Policy, Hong Kong University of Science and Technology.
9. Linda Prokopy. (2002). Department of City & Regional Planning, UNC-CH. Dissertation title: "The Relationship between Participation and Project Outcomes: A Study of Rural Drinking Water projects in India." Professor of Natural Resources Planning, Department of Forestry and Natural Resources, Purdue University. West Lafayette, Indiana, USA.
10. Kristin Komives. (2003). Department of City & Regional Planning, UNC-CH. Dissertation title: "Infrastructure, Property Values, and Housing Choice: An Application of Property Value Models in the Developing Country Context." Senior Lecturer, Institute of Social Studies. The Hague, Netherlands.
11. Joe Cook. (2007). Department of Environmental Sciences and Engineering, UNC-CH. Dissertation title: "Are cholera and typhoid vaccines a good investment for a slum in Kolkata, India?" Associate Professor, Washington State University.

12. Dohyeong Kim. (2007). Department of City and Regional Planning, UNC-CH. Dissertation title: "Strategy for Determining Vaccination User Fees and Locations: A Case Study in Rural China." Associate Professor of Public Policy, University of Texas at Dallas.
13. Richard Thorsten. (2007). Department of City and Regional Planning, UNC-CH. Dissertation title: "Predicting Sustainable Performance and Household Satisfaction of Community-Oriented Rural Water Supply Projects: A Quantitative Evaluation of Evidence from Ghana and Peru." Director of International Programs, Water.org. Kansas City, Mo.
14. Vimalanand Prabhu. (2007). Department of Public Policy, UNC-CH. Dissertation title: "Income Polling and Demand Aggregation in Low-Income Households in Navi Mumbai, India: Evidence from Willingness to Pay, Risky Choices, and Anthropometrics." Principal Economist. Merck, Inc. Philadelphia, Pa.
15. Brian Maskery. (2009). Department of Environmental Sciences and Engineering, UNC-CH. Dissertation title: "Incorporation of private demand and herd protection in vaccine policy models: an example for cholera vaccination in Matlab, Bangladesh." Research Scientist, Centers for Disease Control, Atlanta, Georgia.
16. Marc Jeuland. (2009). Department of Environmental Sciences and Engineering, UNC-CH. Dissertation title: "Planning Water Resources Development in an Uncertain Climate Future: A Hydro-economic Simulation Framework Applied to the Case of the Blue Nile. Associate Professor, Sanford Institute of Public Policy, Duke University.
17. Semra Ozdemir. (2013). Department of Environmental Sciences and Engineering, UNC-CH. Dissertation title: "Measuring the Value of Social Programs: An Application to Early-Childhood Programs." Research Assistant Professor, National University of Singapore-Duke University Health Policy Program.
18. Maura Allaire. (2015). Department of Environmental Sciences and Engineering, UNC-CH. Dissertation title: "Essays on Adapting to Risks: Economic Impacts and Management of Hydrologic Extremes." Assistant Professor. University of California-Irvine.
19. David Fuente. (2017). Department of City and Regional Planning, UNC-CH. Dissertation title: Essays on Water Pricing and Tariff Design in Developing Countries. Assistant Professor. University of South Carolina.

Current PhD Students (Chair of Doctoral Committee)

Kristen Downs. Department of Environmental Sciences and Engineering, UNC-CH.

Jane Zhao. Department of City and Regional Planning, UNC-CH.

Helena Cardenas. Department of City and Regional Planning, UNC-CH.

Mark Radin. Department of Environmental Sciences & Engineering. UNC-CH

Publications:

- **9723 citations (November 25, 2018)**
- **Google h-index – 55**
- **10-index – 139**

Books:

1. *Water Management Models in Practice: A Case Study of the Aswan High Dam*. 1983, Elsevier Scientific Publishing Co., Amsterdam. 246 pages (with Giorgio Guariso).
2. *High Hopes for High Tech: Microelectronics Policy in North Carolina*. Editor. University of North Carolina Press, 1985. 341 pages.
3. *Project and Policy Appraisal: Integrating Economics and the Environment*. Organization for Economic Cooperation and Development. Paris. 1994. 287 pages. (with David Pearce, Steven Georgiou, and David James).
4. *Economic Values and the Environment in the Developing World*. 1997. Edward Elgar Publishing, Ltd. UK. 167 pages. (with David Pearce, Steven Georgiou, and Dominic Moran).
5. *Expert Advice for Policy Choice: Analysis and Discourse*. Georgetown University Press. 1997. 430 pages. (with Duncan MacRae, Jr.)
6. *The Contingent Valuation Method in Developing Countries: A Guide*. (Under preparation). Springer Publishing. (with Vic Adamowicz).

Refereed Articles:

1. "The Supply of Physicians and Physicians' Incomes: Alternative Projections of the Future." *Journal of Health Politics, Policy, and Law*. Vol. 2, No. 2, Summer 1977, pp. 227-256. (with D.C. Warner and M. Katz).
2. "A Multiobjective Programming Analysis of Lake Nasser Management." *Environment and Planning A*, Vol. 12, 1980, pp. 369-379. (with G. Guariso, K.E. Haynes, and M. Younis).
3. "Valuing Water in the Agricultural Environment of Egypt: Some Estimation and Policy Considerations." *Regional Science Perspectives*. Vol. 10, No. 1, 1980. pp. 109-126. (with K.E. Haynes).
4. "A Salt Balance Model of Lake Nasser." *Water Supply and Management*, Vol. 4, 1980. pp. 73-80. (with G. Guariso, M.A. Samie, and C. Kramer).
5. "Nile Water for Sinai: Framework for Analysis." *Water Resources Research*. Vol. 17, No. 6, December 1980. pp. 1585-1593. (with G. Guariso, B.S. Zikri, and K.H. Mancy).
6. "International Management of the Nile: Stage Three?" *Geographic Review*. Vol. 71, No. 1, January 1981. pp. 17-32. (with K.E. Haynes).

7. "A Real-Time Management Model for the Aswan High Dam Reservoir with Policy Implications." *Geographical Analysis*, Vol. 13, No. 4, 1981. pp. 355-372. (with G. Guariso, K.E. Haynes, and M. Younis).
8. "Planning of Capacity Expansion: Stochastic Process and Game-Theoretic Approaches." *Socio-Economic Planning Sciences*. 1984. Vol. 18, No. 3, pp. 195-205. (with K.E. Haynes et al.).
9. "Economic Analysis in Regulatory Decisions: The Implications of Executive Order 12291." *Science, Technology, and Human Values*, Winter 1984. Vol. 9, Issue 1, No. 46. pp. 63-71. (with W. N. Grubb).
10. "Water Capacity Expansion: Some Local Planning and Design Considerations." *Journal of the American Planning Association*, Summer 1984. Vol. 50, No. 3, pp. 359-364. (with K.E. Haynes et al.).
11. "An Examination of Tax Credits for Solar Hot Water Heating Systems." *Energy Systems and Policy*. 1985. Vol. 9, No. 2. pp. 115-139.
12. "An Application of Multiobjective Programming to Waterfront Management." *Coastal Zone Management Journal*. 1985. Vol. 13, No. 2. pp. 151-176 (with Roger Stough).
13. "An Examination of EPA's Regulatory Impact Analysis of Uranium Mill Tailings." *Environmental Impact Assessment Review*. 1986: 6, pp. 223-252 (with William Drummond). [Feature Article]
14. "The Issue of Standing in Cost-Benefit Analysis." *Journal of Policy Analysis and Management*. 1986. Vol. 5, No. 4, pp. 665-682. (with Duncan MacRae, Jr.).
Reprinted in *Benefit-Cost Analysis*, edited by Richard O. Zerbe. Edward Elgar Publishing, Ltd., Cheltenham: UK. 2008.
15. "Implications of Ethiopian Water Development for Egypt and Sudan." *International Journal of Water Resources Development*, Vol. 3, No. 2, 1987. pp. 105-114. (with Giorgio Guariso).
Reprinted in *Water Resources and Economic Development*, R.M. Saleth, editor. Edward Elgar Publishing, Cheltenham, UK. 2002. pp. 92-114.
16. "Computerized Information Management in a System-Poor Environment: Lessons from the Design and Implementation of a Computer System for the Sudanese Planning Ministry." *Third World Planning Review*, 9(4), 1987. pp. 361-379. (with Craig Calhoun and William Drummond).
Reprinted in *Sudan After Nimeiri*, edited by Peter Woodward. 1991. Routledge, London.
17. "Assessing Preferences in Cost-Benefit Analysis: Reflections on Rural Water Supply in Haiti." *Journal of Policy Analysis and Management*. Vol. 7, No. 2, 1988. pp. 246-263. (with Duncan MacRae, Jr.).
18. "Who Really Wants Donor Coordination?" *Development Policy Review*. Vol. 6, 1988. pp. 295-309. (with Craig Calhoun).

19. "Water Vending Activities in Developing Countries: A Case Study of Ukunda, Kenya." *International Journal of Water Resources Development*, September 1989. pp. 158-168. (with Donald T. Lauria, Daniel A. Okun, and Xinming Mu).
Reprinted in *Cost-Benefit Analysis*, edited by Richard Layard and Stephen Glaister, Cambridge University Press, 1994.
20. "Estimating the Willingness to Pay for Water Services in Developing Countries: A Case Study of the Contingent Valuation Method in Haiti." *Economic Development and Cultural Change*. January 1990. Vol. 38, No. 2, pp. 293-311. (with John Briscoe, Xinming Mu, and William Barron).
Reprinted in *Housing the Poor in the Developing World: Methods of Analysis, Case Studies and Policy*, edited by A. Graham Tiplle and Kenneth G. Willis. 1991. Routledge, London.
Also reprinted in *The Stated Preference Approach to Environmental Valuation Volume III: Benefit-Cost Analysis and Natural Resource Damage Assessment*. Richard Carson, Editor. Ashgate Publishing., UK. 2007.
21. "Calculating the Value of Time Spent Collecting Water: Some Estimates for Ukunda, Kenya." *World Development*, February 1990. Vol. 18, No. 2, pp. 269-280. (with Xinming Mu and Robert Roche).
22. "Modeling Village Water Demand Behavior: A Discrete Choice Approach." *Water Resources Research*, 1990. Vol. 26, No. 4. pp. 521-529. (with Xinming Mu and John Briscoe).
23. "Strategy for Cost Recovery in the Rural Water Sector: A Case Study of Nsukka District, Anambra State, Nigeria." *Water Resources Research*, 1990. Vol. 26, No. 9, pp. 1899-1913. (with Apia Okorafor, Augustine Okore, and Alexander McPhail).
24. "Planning in Squatter Settlements: An Interview with a Community Leader." *Journal of Planning Education and Research*. 1990. Vol. 9, No. 3. pp. 207-212. (with Donald T. Lauria).
Reprinted in *Teacher's Guide to World Resources: Exploring Sustainable Communities*. World Resources Institute, Washington D.C.
25. "Judgments About Who Has Standing in Cost-Benefit Analysis? A Comment." *Journal of Policy Analysis and Management*. 1990. Vol. 9, No. 4. pp. 536-547. (with Duncan MacRae, Jr.).
26. "A Study of Water Vending and Willingness to Pay for Water in Onitsha, Nigeria." *World Development*. 1991. Vol. 19, No. 2/3, pp. 179-198. (with Donald T. Lauria and Xinming Mu).
Reprinted in *Economic Analysis of Environmental Impacts*, by John Dixon, Louise Fallon Scura, Richard Carpenter, and Paul Sherman. Earthscan Publications, Second Edition, 1994.
Also reprinted in *Economics of Water Resources*, edited by R. Quentin Grafton, The International Library of Critical Writings in Economics, Volume 234. Edward Elgar Publishing. June 2009.
27. "Giving Respondents Time to Think in Contingent Valuation Studies: A Developing Country Application." *Journal of Environmental Economics and Management*. May, 1992. Vol. 22, pp. 205-225. (with V. Kerry Smith and others).
Reprinted in *Environmental Valuation*, edited by Kenneth G. Willis, Kenneth Button, and Peter Nijkamp. Edward Elgar Publishing, Cheltenham, UK. 1999. Volume 1, Chapter 11.

28. "Opportunities for Regional and International Cooperation in the Nile Basin." *Water International*. Vol. 17, No. 3, September, 1992. pp. 144-154. (with Elizabeth McClelland)
29. "Possible Adverse Effects of Increasing Block Water Tariffs in Developing Countries." *Economic Development and Cultural Change*. Vol. 41, No. 1. October, 1992. pp. 75-87.
30. "Demand for Water in Rural Areas: Determinants and Policy Implications." *World Bank Research Observer*. Vol. 8, No. 1, Jan. 1993. pp. 47-70. (with John Briscoe and others).
Reprinted in *Water Resources and Economic Development*, R.M. Saleth, editor. Edward Elgar Publishing, Cheltenham, UK. 2002. pp. 232-255.
Also reprinted in *Economics of Water Resources*, edited by R. Quentin Grafton, The International Library of Critical Writings in Economics, Volume 234. Edward Elgar Publishing. June 2009.
31. "Household Demand for Improved Sanitation Services in Kumasi, Ghana: A Contingent Valuation Study." *Water Resources Research*. Vol. 29, No. 6, 1993. pp. 1539-1560 (with D.T. Lauria, A.M. Wright, K. Choe, J.A. Hughes, and V. Swarna).
32. "Water Resource Issues in Developing Countries" *Water Resources Research*. Vol. 29, No. 7, July, 1993. pp. 1883-1888. Introduction to Special Section: Water Resource Issues and Problems in Developing Countries. (with David Brookshire).
33. "Rethinking Rural Water Supply Policy in the Punjab, Pakistan." *Water Resources Research*. Vol. 29, No. 7, July, 1993. pp. 1943-1954. (with Anjum Altaf, V. Kerry Smith, and Haroon Jamal).
Reprinted in *Economics of Water Resources*, edited by R. Quentin Grafton, The International Library of Critical Writings in Economics, Volume 234. Edward Elgar Publishing. June 2009. (ISBN 978 1 84720 646 6).
34. "Rent-Seeking in the Water Supply Sector: A Case Study of Jakarta, Indonesia." *Water Resources Research*. Vol. 29, No. 7, July, 1993. pp. 1965-1974. (with Laszlo Lovei).
35. "Household Sanitation in Kumasi, Ghana: A Description of Current Practices, Attitudes, and Perceptions." *World Development*. Vol. 21, No. 5, 1993. pp. 733-748. (with D.T. Lauria, A.M. Wright, K. Choe, J.A. Hughes, and V. Swarna).
36. "The Economic Benefits of Surface Water Quality Improvements in Developing Countries: A Case Study of Davao, Philippines." *Land Economics*. Vol. 72, No. 4. November, 1996. pp. 519-537. (with KyeongAe Choe and Donald Lauria).
Reprinted in *Urban Planning and Management*, edited by R. Kerry Turner and Ian Bateman. (part of the series, *Managing the Environment for Sustainable Growth*). Edward Elgar, UK, 2000. Also reprinted in *Economics of Water Quality*, edited by K. William Easter and Naomi Zeitouni. (Part of the series, *The International Library of Environmental Economics and Policy*). Ashgate, UK, 2005.
37. "Administering Contingent Valuation Surveys in Developing Countries." *World Development*. Vol. 26, No. 1. 1998. pp. 21-30.

Reprinted in *The Stated Preference Approach to Environmental Valuation Volume III: Benefit-Cost Analysis and Natural Resource Damage Assessment*. Richard Carson, Editor. Ashgate Publishing., UK. 2007.

38. "Playing Chicken on the Nile? The Implications of Microdam Development in the Ethiopian Highlands and Egypt's New Valley Project." *Natural Resources Forum*. August, 1998. pp. 155-163. (with John Waterbury).

39. "Participatory" Research for Development Projects: A Comparison of the Community Meeting and Household Survey Techniques. *Economic Development and Cultural Change*. Vol. 41, No. 1. October, 1998. pp. 73-94. (with Jennifer Davis).

40. "Implementing a Demand-driven Approach to Community Water Supply Planning: A Case Study of Lugazi, Uganda. *Water International*. Vol. 23, 1998. pp. 134-145. (with Jennifer Davis and Elizabeth McClelland).

Reprinted in *Water Resources and Economic Development*, R.M. Saleth, editor. Edward Elgar Publishing, Cheltenham, UK. 2002. pp. 446-457.

41. "Designing a Neighborhood Deal: for Urban Sewers: A Case Study of Semarang, Indonesia." *Journal of Planning Education and Research*. 2000. 19: 297-308. (with Jennifer Davis, Richard Pollard, and Harry Miarsono).

42. "Individuals' Rates of Time Preference in Developing Countries: Results of a Multi-country Study." *Environmental Science and Technology*. April 15, 2000. 43:8 1445-1455. (with Christine Poulos). [pubs.acs.org/isubscribe/journals/esthag/34/i08/pdf/es990730a.pdf]

43. "Future access to HIV vaccines - Report from a WHO-UNAIDS Consultation, Geneva, 2-3 October 2000." *AIDS* 15 (7): W27-W44 MAY 4 2001. (Ainsworth M, Bhamarapavati N, Batson A, Bishai D, Moran-Carpentier O, Casabona J, Clemens J, Collins C, El Habib R, Forsythe S, Goldenthal K, Kunanusont C, Longini IM, Mahoney R, Mastro TD, Ndumbe P, Pallangyo K, Rowley J, Sadoff J, Shin SI, Pratt D, Stanton BF, Suraratdecha C, Teixeira PR, van den Bussche I, Vandermissen W, Walsh JA, Whittington D, Widdus R.).

44. "How Important is Improved Water Infrastructure to Microenterprises? Evidence from Uganda." *World Development*. Vol. 29, No. 10. October, 2001. pp. 1753-1767. (with Jennifer Davis, Alice Kang, and Jeffrey Vincent.)

45. "Private demand for a HIV/AIDS vaccine: Evidence from Guadalajara, Mexico." *Vaccine*. 20, 2002. pp. 2585-2591. (with Osmar Matsui, John Freiburger, George Van Houtven, and Subhrendu Pattanayak).

46. "Improving the Performance of Contingent Valuation Studies in Developing Countries. *Environmental and Resource Economics*. Vol. 22, Nos. 1-2. June, 2002. pp. 323-367.

47. "Behavioural studies of the domestic demand for water services in Africa: a reply to Stephen Merrett." *Water Policy*. Vol. 4, No. 1, 2002. pp. 83-88.

48. "Household Demand for Improved Piped Water Services in Kathmandu, Nepal."

Water Policy. Vol. 4, Issue 6, 2002. pp. 531-556. (with Subhrendu Pattanayak, Jui-Chen Yang, and Bal Kumar).

49. "Municipal Water Pricing and Tariff Design: A Reform Agenda for South Asia." *Water Policy*. 5, 2003, pp. 61-76.

50. "The Economic Benefits of Malaria Prevention: A Contingent Valuation Study in Marracuene, Mozambique." *Journal of Health and Population in Developing Countries*. July 15, 2003. (with Armando Castelar Pinheiro and Maureen Cropper). www.jhpcdc.unc.edu/2003_papers/ecowhit.pdf

51. "Visions of Nile Development." *Water Policy*. Vol. 6, No. 1. 2004, pp. 1-24.

52. "Why Have Some Countries on International Rivers been Successful Negotiating Treaties? A Global Perspective." *Water Resources Research*. Vol. 40, No. 5, May 2004. 18 pages. (with Jennifer Song).

53. "Ethical Issues with Contingent Valuation Surveys in Developing Countries: A Note on Informed Consent and other Concerns." *Environmental and Resources Economics*. Vol. 28, No. 4. pp. 507-515. 2004.

54. "Challenges for Water Sector Reform in Transition Economies." *Water Policy*. 6 (4). 2004. pp. 1-15. (with Jennifer Davis).

55. "The Demand for a Malaria Vaccine: Evidence from Ethiopia." *Journal of Development Economics*. Vol. 75, pp. 303-318, 2004. (with Maureen Cropper, M. Haile, J.Lampietti, and C. Poulos.)

56. "Costs-of-illness of typhoid fever in Indian urban slum community: implications for vaccination policy." *Journal of Health, Population, and Nutrition*. Vol. 22, No. 3, pp. 304-310, 2004. (with Rajiv Bahl, Anju Sinha, Christine Poulos, Sunil Sazawal, Ramesh Kumar, Dilip Mahalanabis, Camilo J Acosta, John Clemens, Maharaj K Bhan).

57. "A cost-benefit analysis of typhoid fever immunization programs in an Indian urban slum community." *Journal of Health, Population, and Nutrition*. Vol. 22, No. 3, pp. 311-321, 2004. (with Christine Poulos, Rajiv Bahl, Maharaj K. Bhan, John Clemens and Camilo J. Acosta).

58. "An Economic Reappraisal of the Melamchi Water Supply Project, Kathmandu, Nepal." *Portuguese Journal of Economics*. Vol. 3, No. 2, 2004. (with Donald T. Lauria, Vimalanand Prabhu, and Joe Cook).

59. "Private Demand for an AIDS vaccine in Thailand." *Health Policy*. Vol. 71, 2005. pp. 271-287. (with Chutima Suraratdecha, Martha Ainsworth, Viroj Tangcharoensathien).

60. "Coping with Unreliable Public Water Supplies: Averting Expenditures by Households in Kathmandu, Nepal." *Water Resources Research*. Vol. 4, No. 2, Feb. 2005. 11 pages. (with Subhrendu Pattanayak, Jui-Chen Yang, and Bal Kumar).

61. "Measuring Individuals' Valuation Distributions Using a Stochastic Payment Card Approach." *Ecological Economics*. Vol. 55, pp. 143-154, 2005. (with Hua Wang).
62. "Water Resources Management in the Nile Basin: The Economic Value of Cooperation." *Water Policy* 7, pp. 227-252, 2005. (with Xun Wu and Claudia Sadoff).
63. "Incentive Compatibility and Conflict Resolution in International River Basins: A Case Study of the Nile Basin." *Water Resources Research*. Vol. 42, W02417. 15 pages. 2006. (with Wu Xun).
64. "Household Demand for Typhoid Fever Vaccines in Hue, Vietnam: Implications for Immunization Programs." *Health Policy and Planning*. March 30, 2006. pp. 241-255. 2006. (with Do Gia Canh, Le Thi Kim Thoa, Nugroho Utomo, Nguyen Thai Hoa, Christine Poulos, Dang Thi Dieu Thuy, Dohyeong Kim, Andrew Nyamete, and Camilo Acosta).
65. "Designing stated choice experiments to produce graphical information for policymakers." *Journal of Policy Analysis and Management*. Vol. 26, No. 1, pp. 189-199. 2006. (with Dipika Sur, Joe Cook, Susmita Chatterjee, and Jacqueline Deen).
66. "Reliability of Stated Preferences for Vaccines with Time to Think." *Economic Inquiry*. Vol. 45, No. 1, pp. 100-114. 2007. (with Joe Cook, F. Reed Johnson, Andrew Nyamete, and Do Gia Canh).
67. "Private Demand for Cholera Vaccines in Rural Bangladesh." *Health Policy*. Vol. 85, pp. 184-195, 2007. (with Z. Islam, Brian Maskery, Andrew Nyamete Mark Horowitz, and Mohammad Yunus).
68. "Private Demand for Cholera Vaccines in Beira, Mozambique." *Vaccine*. Volume 25, Issue 14, 30. March 2007, pp. 2599-2609. (with Marcelino E. S. Lucas, Marc Jeuland, Jacqueline Deen, Nivalda Lazaro, Melissa MacMahon, Andrew Nyamete, Avertino Barreto, Lorenz von Seidlein, Arnaldo Cumbane, Francisco F. Songane).
69. "Private Household Demand for Cholera Vaccines in Hue, Vietnam." *Value in Health*. Vol. 11, No. 1, Jan/Feb. 2008, pp. 119-128. (with Dohyeong Kim, Do Gia Canh, Christine Poulos, Le Thi Kim Thoa, Joe Cook, Nguyen Thai Hoa, Andrew Nyamete, Dang Thi Dieu Thuy, Jackie Deen, Dang Duc Trach, John Clemens, Vu Dinh Thiem, Dang Duc Anh).
70. "Comparison of Cost-of-Illness with Willingness-to-Pay Estimates to Avoid Shigellosis: Evidence from China. Jan. 30, 2008. *Health Policy and Planning*. (with Christine Poulos, and others).
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37. "Infrastructure Coverage and the Poor: A Global Perspective. World Bank Policy Research Paper No. 2551. February, 2001. Available at:
<http://econ.worldbank.org/view.php?type=5&id=1412>. (with Kristin Komives and Xun Wu).
38. "Willingness to Pay for Improved Water Supply in Kathmandu Valley, Nepal." Research Triangle Institute. Final Report to the Water and Sanitation Program for South Asia, New Delhi; World Bank. August, 2001. (with Subhrendu Pattanayak, Jui-Chen Yang, and Bal Kumar.)
39. "Tariffs and Subsidies." Chapter 5 in *New Designs for Water and Sanitation Transactions: Making Private Sector Participation Work for the Poor*. Water and Sanitation Program; PPIAF. World Bank. Washington D.C. pp. 5-56. May, 2002. (with Kristin Komives).
40. *Africa's International Rivers: An Economic Perspective*. The World Bank, Direction in Development Series. 2002. 81 pages. (with Claudia Sadoff and David Grey)
41. *Water Tariffs and Subsidies in South Asia: Understanding the Basics*. Water and Sanitation Program. New Delhi, India. 2002. 16 pages (with John Boland and Vivien Foster).

42. *Guidelines for Designing Energy Modules in Multi-topic Household Surveys: Report to the World Bank*. September, 2004. (with Doug Barnes and Kyran O'Sullivan).
43. *Measuring What Works: The Feasibility and Desirability of Additional Cost-Benefit Analysis for Sixteen "Social Programs that Work"*. Report to the MacArthur Foundation. Chicago, Illinois. September, 2007. 115 pages. (with Brian Maskery)
44. *Opportunities for Cooperative Water Resources Development on the Eastern Nile: Risks and Rewards*. Final Report of the Scoping Study Team to the Eastern Nile Council of Ministers. October, 2008. 85 pages. Washington D.C.: World Bank. (with Don Blackmore).
45. *The Willingness of Americans to Pay for Social Programs: An Application to Reducing Childhood Poverty*. Report to the MacArthur Foundation. March 10, 2009. 99 pages. (F. Reed Johnson, Lauren Weaver, and Semra Ozdemir).
46. *Water and Wastewater Tariff Reform in Egypt – A Case Study of the Fayoum Water and Wastewater Company*. A Report to the Egyptian Water Regulatory Authority. December 17, 2010. 114 pages. (with Donald T. Lauria and Celine Nauges)
47. *Eastern Nile Strategic Economic Assessment: A Scoping-level Economic Analysis of Multipurpose Dams in the Blue Nile Gorge*. November, 2011. World Bank, Washington D.C. 215 pages. (with Marc Jeuland).
48. *Ganges Strategic Basin Assessment: A Discussion of Regional Opportunities and Risks*. March, 2012. World Bank, Washington D.C. 124 pages. (with Claudia Sadoff, Harshadeep Rao, Donald Blackmore, Xun Wu, Anna McDonnell, Marc Jeuland, Sylvia Lee).
49. *The Challenge of Cost Recovery and Tariff Reform in Six Utilities in the Delta Region of Egypt*. Report to the Egyptian Water Regulatory Authority. November, 2012. 144 pages + appendices. (with Celine Nauges, Xun Wu, David Fuente, and Racha Ramadan).
50. "The Economic Value of Moving Toward a More Water Secure World." Global Water Partnership TEC Background Paper. Stockholm. 2013. 53 pages. (with Claudia Sadoff and Maura Allaire).
51. *The Grand Ethiopian Renaissance Dam: An Opportunity for Collaboration and Shared Benefits in the Eastern Nile Basin - An Amicus Brief to the Riparian Nations of Ethiopia, Sudan and Egypt From the International, Non-partisan Eastern Nile Working Group Convened at the Massachusetts Institute of Technology on 13-14 November 2014*, by the MIT Jameel World Water and Food Security Lab. Co-editor.
52. *Securing Water, Sustaining Growth: Report of the GWP/OECD Task Force on Water Security and Sustainable Growth*, University of Oxford, UK, 180 pp. 2015. (with Sadoff, C.W., Hall, J.W., Grey, D., Aerts, J.C.J.H., Ait-Kadi, M., Brown, C., Cox, A., Dadson, S., Garrick, D., Kelman, J., McCornick, P., Ringler, C., Rosegrant, M., and Wiberg, D).
53. "Benefits and Costs of the Water and Sanitation Targets for the Post 2015 Development Agenda." Perspectives Paper. Copenhagen Consensus Center. 2015. 11 pages.

54. "Water Resources Management." Perspectives Paper. Copenhagen Consensus Center. 2015. 17 pages.
55. "Evaluating the Performance of Alternative Municipal Tariff Designs. Environment for Development Discussion Paper Series. EfD DP 16-02. Gothenburg, Sweden. 2016. (With C. Nauges).
56. "Asking Willingness-to-Pay Questions in Stated Preference Surveys: A Review and Research Agenda." EfD DP 16-18. Gothenburg, Sweden. May, 2016. (With W. Adamowicz and P. Lloyd-Smith).
57. "Unbundling water prices: Transitioning towards more inclusive outcomes." Perspectives Paper. Global Water Partnership. Stockholm, Sweden. 12 pages. 2016. (with Mike Young).
58. *Reference Case Guidelines for Benefit-Cost Analysis in Global Health and Development*. Harvard School of Public Health. 2019 (with Lisa Robinson, James Hammitt, et al.)

Selected Workshops and Training Activities

1. "A Review and Assessment of Techniques for Systematic Client Consultation in World Bank Projects." Presentation to Environmental Training Course Offered to World Bank Staff, Duke University, June 22, 1995.
2. Organized and delivered 2-day workshop on "The Economic Value of Health Risks", Centers for Disease Control. Atlanta, Ga. (with V. Kerry Smith, Duke University). June 6-7, 1994.
3. Organized and delivered 2-day workshop for senior staff of the Directorate of Water Development, Ministry of Natural Resources, on the rural water supply and sanitation investment planning. Kampala, Uganda. July 25-26, 1994.
4. Organized 1-day workshop for World Bank Officials entitled, "Water Pricing in Developing Countries." Delivered several presentations. Washington D.C. October 25, 1994; November 1995.
5. Organized and presented workshop for senior technical and management staff of PRONAR (Rural Water Agency, Ministry of Water) on the use of contingent valuation surveys in community water supply planning. Maputo, Mozambique. November 16-25, 1994.
6. Organized and presented one-week workshop for senior technical and management staff of PRONAR (Rural Water Agency, Ministry of Water) on the use of demand-driven planning approaches in community water supply planning. Maputo, Mozambique. November June 5-10, 1995.
7. "A Review and Assessment of Techniques for Systematic Client Consultation in World Bank Projects." Presentation to Environmental Training Course Offered to World Bank Staff, Duke University, June 22, 1995.

8. Organized and delivered 1-day workshop for senior staff of the Ministry of Public Works on demand-driven sanitation planning. July 28, 1995.
9. "The Economic of Sewage Investments in Developing Countries." Invited presentation to World Bank short course entitled, "Water and Sanitation Investments: The Enabling Environment." Johns Hopkins University, Baltimore, Maryland. September 8, 1995.
10. Organized 2-day workshop for World Bank staff entitled, "Water Pricing in Developing Countries." Delivered several presentations. Washington D.C. October, 1995; February, 1997, and October, 1998.
11. Organized and delivered three week training program on the use of the contingent valuation method in developing countries, for graduate students and consultants, Department of Economics, University of Dar es Salaam. Sept. 22-October 10, 1997.
12. Organized and presented a two-day seminar for the Department for International Development, UK. "Enhancing DFID Capacity for Demand Assessment in Water and Sanitation Projects." London, Dec. 15-16, 1997.
13. Director of Executive Training Course, "Water And Sanitation Planning in Developing Countries," in Summer Development Workshops at the Massachusetts Institute of Technology. June, 2000 and 2002.
14. Eight Invited Lectures, "The Use of the Contingent Valuation Method in Developing Countries." "Department of Economics, University of Gothenburg, Sweden. May, 2003.
15. EEPSEA Training Program on the Use of Stated Preference Methods in Developing Countries. Hanoi, Vietnam. May 2004. (with Vic Adamowicz).
16. Three Lectures. "The Use of the Contingent Valuation Method and Travel Cost Models in Developing Countries." World Bank Training Program - Economics and the Environment. July 26-27, 2004.
17. Training course, "Economic Appraisal for Large Dam Projects," designed for water resources professionals in the Nile Basin. Cairo, Egypt. Jan. 29-Feb. 1, 2007.
18. Three lectures on environmental economics for development professionals in Canadian CIDA. Ottawa, Canada. April 27, 2007.
19. Twelve lectures on water policy in developing countries for environmental professionals in Southeast Asia. Kuala Lumpur, Malaysia. November 16-19, 2007.
20. Twelve lectures on Environment and Development. Tropical Agricultural Research and Higher Education Center (CATIE), Turrialba, Costa Rica. January 10-12, 2008.
21. Eight lectures on "Mistakes in Household Survey Design" for environmental professionals in Southeast Asia. Sponsored by the Economy and Environment Program for Southeast Asia. Bangkok, Thailand. May 9-10, 2008.

22. Ten lectures on Environmental Valuation and Development. Tropical Agricultural Research and Higher Education Center (CATIE), Turrialba, Costa Rica. July 28-August 2, 2008.
23. Lectures on the economics of cooperation on international rivers. World Bank's International Rivers Executive Training Course. Feb. 23-25, 2009.
24. "The Challenge of Improving Water and Sanitation in Developing Countries." Invited lecture. Course on Global Change and Sustainability, offered by the Politecnico di Milano and the Politecnico di Turino. April 21, 2009. Bardonecchia, Italy.
25. Two-day training course, "Water and Sanitation Planning in Developing Countries," designed for researchers in the Center for Environmental Economics and Policy in Africa. May 13-14, 2010.
26. Four lectures on Economic Analysis of Water Projects and the Design of Municipal Water and Sanitation Tariffs. Delivered to participants attending the Temasek Foundation Water Leadership Programme. Lee Kuan Yew School of Public Policy. National University of Singapore. October 2011, May 2012, November 2012, May 2013.
27. Two-week training course for the Latin American and Caribbean Environmental Economics Program. "The Economics of Climate Change and Water." July 25-August 3, 2012. Turrialba, Costa Rica. (with W. Michael Hanemann and Marc Jeuland).
28. Four lectures in training program for executives of United Utilities, UK on innovation in the water industry. Manchester Business School. November 26-30, 2012.
29. Two-week training course for the Latin American and Caribbean Environmental Economics Program. "Valuation and Household Surveys." July 20-August 3, 2014. Turrialba, Costa Rica. (with Vic Adamowicz).
30. Invited Lectures. School of Environmental Management and Policy, Remin University, August, 2017. Beijing, China.
31. Plenary Lecture. "A Comparison of the Benefits and Costs of Social Norm Information Treatments vs. Price Increase in the Municipal Water Supply Sector." First annual meeting of the Chinese Association of Resource and Environmental Economists. August 26, 2017. Beijing, China.
32. Plenary Lecture. "The Role of Economic Analysis in Managing Water & Managing Emotions in the Nile Basin." 5th Nile Basin Development Forum, Oct. 25, 2017. Kigali, Rwanda.

Selected Consultancies:

1. National Commission on Water Quality. Managed and assisted with the preparation of the Commission's technical appendices on the impact of water pollution control requirements on American industry.

2. Department of Civil Engineering, University of Texas at Austin. Study of the social and environmental effects of in-situ uranium mining in South Texas. September 1979-December 1980.
3. Ford Foundation, Cairo Field Office, 1977-1980.
4. Environmental Training and Management in Africa. (USAID project. Mission to Kenya. August 1983).
5. USAID Khartoum Mission. Project to develop a management information system for the Ministry of Finance and Economic Planning. July 1984-February 1986.
6. World Bank, UNDP Handpumps Project. Kenya Rural Water Survey. 1986.
7. World Bank, Infrastructure and Urban Development Department. Willingness to Pay for Improved Water Services Research Project. July 1987-Present.
8. Asian Development Bank. Manila, Philippines. 1990-1992.
9. Organization for Economic Development and Cooperation. Paris, France. 1990-present.
10. Chinese Research Academy of Environmental Sciences. Beijing, China. 1992.
11. World Bank, AF6PH, AF2PH.
12. Carried out an external program evaluation of both the Natural Resource Management and Environmental Economics MSc. degree programs for the Postgraduate Institute of Agriculture, University of Peradeniya. Kandy, Sri Lanka. May 15-20, 2000.
13. AIDS Vaccine Demand Research Team, Health Systems Research, Joint Ministry of Public Health, Government of Thailand, and World Bank Research Program.
14. Resource Person, Water Utilities Partnership, World Bank. Washington D.C. 2000-2001

Research and/or consulting experience in the following countries:

<i>Africa:</i>	Egypt	Nigeria
	Sudan	Ghana
	Kenya	Liberia
	Tanzania	Ethiopia
	Uganda	Mozambique
<i>Asia:</i>	China	Indonesia
	Philippines	Thailand
	Pakistan	India
	Nepal	Korea
	Vietnam	Bangladesh

<i>Latin America:</i>	Haiti
Chile	Guatemala
Costa Rica	Mexico
Colombia	

<i>Eastern Europe:</i>	Bulgaria
	Ukraine

Other:

Guest Editor, Special issue of *Water Resources Research* on water planning and policy in developing countries. July, 1993.

Guest Editor, *International Journal of Water Resources Development*, special edition on the management of the upper Nile. Vol. 3, No. 2, 1987.

Recipient (with Duncan MacRae) of the Raymond Vernon Award for the best article in Vol. 5 of the *Journal of Policy Analysis and Management*. ["The Issue of Standing in Cost-Benefit Analysis."]

World Bank's Nile Advisory Group. 1997-2011.

Who's Who in Economics. Edgar Elgar Publishing, 2003.

Guest Editor, Special Issue of *Water Policy* – “Opportunities for Cooperation on the Ganges.” 2013. (with Wu Xun).

Testimony before the House of Representatives of the United States Congress, Foreign Affairs Subcommittee on Africa, Global Health, and Global Human Rights. “The Role of Water in Avoiding Conflict and Building Prosperity.” September 9, 2015.

OpEd in *The Conversation*. “Why technical discussions are needed for the Grand Ethiopian Renaissance Dam.” June 8, 2016. <http://theconversation.com/why-technical-discussions-are-needed-for-the-grand-ethiopian-renaissance-dam-60004>.

“Invited Opinion Interview (with Stephen Littlechild): Origins of UK Utility Regulation and Applications to Water (Parts 1 & 2). Interviewed by Dale Whittington. *Water Economics and Policy*. 2017. Vol. 3, No. 4, 2017. DOI: 10.1142/S2382624X17710023.