Curriculum vitae
Peter J Kolsky

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Main interests and expertise:

- Professional education and training in environmental/public health engineering, particularly in context of developing countries
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Education:

1975 BA, *magna cum laude,* Harvard University, Cambridge, MA (Eng. Science and Applied Physics)
1977 M Sc, University of North Carolina, Chapel Hill NC (Environmental Engineering)
1999 PhD from the London School of Hygiene & Tropical Medicine, (Tropical Public Health Engineering)

Professional qualifications:

1980 Professional Engineering license (PE) from the State of Massachusetts (lapsed)
1986 Diplomate of the American Academy of Environmental Engineers (lapsed)
1993 UK Chartered Engineer status (CEng) (lapsed)

Awards:

1977 **George C. Bunker Award,** Dept of Env. Sci and Eng'g, School of Public Health, University of North Carolina, for "outstanding scholarship and professional promise."
2011 **Distinguished Alumnus Award**, Dept of Env Sci and Eng'g, Gillings School of Global Public Health.
2011 **Harriet Hylton Barr Distinguished Alumni Award,** Gillings School fo Global Public Health, University of North Carolina at Chapel Hill for Excellence in Public Health Practice

Career history (prior to UNC):

March 2010 to April 2012: *Senior Water and Sanitation Specialist, Latin America and Caribbean Region, World Bank*, *Washington DC.* Task Team Leader (TTL) of the Bank's investments in rural water and sanitation in Haiti, and also lead on water and sanitation activities for the Bank's Emergency Cholera Response Project. Contributed, through field work, to the water and sanitation components of the February 2010 Post Disaster Needs Assessment after the January 2010 Earthquake.

2004 to Feb 2010: *Senior Water and Sanitation Specialist, Water Anchor, World Bank*, *Washington DC.* Served as the sanitation specialist of the central Water Anchor of the World Bank for six years.. Managed technical support to regional operations in sanitation and wastewater management, and served as the Bank's focal point for questions of basic access to sanitation, water supply, and their health impacts. Established and managed the Sanitation, Wastewater and Hygiene Support Service (SWAT), which provides high quality rapid response technical support for Bank staff and clients on basic sanitation and hygiene promotion. Started in 2005, SWAT provided support in 28 countries, and influenced sanitation and wastewater investment exceeding 2 billion dollars. Individually, served as a full member of project teams developing and supervising projects in Iran, Haiti, Central African Republic, and Egypt, and took part in quality reviews for many other projects.

Led development of the Sanitation Hygiene and Wastewater Resource Guide, http://go.worldbank.org/56C808IU50, a web-based introduction to the issues of the sector for the non-specialist. Served as a member of the Technical Advisory Group of the WHO/UNICEF Joint Monitoring Programme for Drinking Water Supply and Sanitation, the body designated by the United Nations for tracking progress in the water and sanitation targets of the Millennium Development Goals.

2003- 2004: *Senior Water and Sanitation Specialist, Water and Sanitation Program (WSP), Washington DC.* Led WSP's global efforts in sanitation, and developed WSP's global Sanitation Strategy and Action Plan, which identified the two leading paradigms of Community-Led Total Sanitation, and

Sanitation Marketing as the natural foci of WSP's efforts. These approaches are the current cornerstone of the current global TSSM project, funded by the Bill & Melinda Gates Foundation.

2001-2003: ***Senior Water and Sanitation Specialist, WSP, Abidjan (Côte d'Ivoire).*** Led WSP's African efforts in sanitation, including the preparation and initial implementation of a SIDA-funded $1.2 million work program on sanitation and hygiene on understanding and stimulating household demand for sanitation and satisfying it through the small-scale private sector. Provided technical support to the World Bank's sanitation work in Sénégal and Niger, and worked on sanitation and rainwater harvesting in rural Bénin for Danida. Advised the government of South Africa on sanitation issues in a mid-term review of a major rural water and sanitation project.

In 2002, co-ordinated WSP's efforts in preparation for AfricaSan in South Africa, the first African conference on sanitation and hygiene. Prepared the conference background paper, presented it as one of the conference keynotes, and drafted the conference declaration. A month later, the World Summit on Sustainable Development (also held in South Africa) adopted the Sanitation Millennium Development Goal (MDG) target of halving the fraction of population without access to sanitation by 2015; many have claimed that the energy emerging from AfricaSan helped sway the summit to adopt the sanitation goal.

1991-2000: ***Lecturer and Senior Lecturer in Tropical Public Health Engineering at the London School of Hygiene & Tropical Medicine (LSHTM) at the University of London***. Started work as a Lecturer with a clearly defined research focus on storm drainage and flooding in slums. **No** sanitation system, (septic tank, sewer, or pit latrine) is "safe" under a metre of flooding, as water and waste inevitably mix and flow through the community, spreading contamination. Kolsky's work combined detailed field data collection with advanced hydraulic analysis to develop verified hydraulic models of the "dual drainage" systems built as part of the British Government's development cooperation with India. The work led to several publications, including a PhD thesis and a manual entitled **Storm Drainage: An Engineering Guide to the Low-Cost Evaluation of System Performance** (IT publications, 1999).

From 1993 to 1995 served as the head of the Environmental Health Programme (EHP) at the School. EHP was funded by the UK government, and undertook research projects in the diverse areas of hygiene promotion, storm drainage, vector and fly control, wastewater reuse, and solid waste management. Kolsky provided technical and managerial support to projects in all these areas, and individually worked on issues of both storm drainage and engineering measures to reduce mosquito and fly breeding.

Kolsky led the proposal effort for a UK Resource Centre in Environmental Health for LSHTM, in a successful partnership with the Water Engineering and Development Centre (WEDC) at Loughborough University. The LSHTM/WEDC consortium (known as WELL) won the contract, and Kolsky became the Associate Director, dealing with the day to day management of the program on the LSHTM side. As Associate Director of WELL, managed a large number of consultancies across the world, and peformed several himself. Served as team leader and sanitation specialist for an evaluation of UNICEF's 30 years of work in Water and Sanitation in India, which revealed some extraordinary successes in water supply, but less progress in sanitation. Taught and published on a range of environmental health topics including environmental health indicators, engineering and environmental control of malaria, and health impacts of water and sanitation interventions.

Taught on graduate-level environmental health and epidemiology courses throughout his time at LSHTM, including the development and implementation of a problem-based unit on the Design of Infectious Disease Control Programmes. The unit became mandatory for the MSc in Infectious Disease Control. Kolsky worked part-time on his dissertation and was awarded a PhD in 1999.

1990: ***Supervising hydraulic software engineer, James M Montgomery, Consulting Engineers, Pasadena California.*** Led the design and coding of hydraulic software for a GIS-based system analysis of the Los Angeles Sewerage Network. This in turn led to the development of Montgomery's generic CAD-based sewer model, for which Kolsky designed both the hydraulic elements, and the overall model structure.

1987-1989: ***Urban water adviser for British charity OXFAM in Phnom Penh Cambodia***.

With a competent mechanical and electrical engineer he recruited, Kolsky managed the Phnom Penh waterworks rehabilitation program funded by OXFAM. This included the specification, procurement and installation of raw water pumps, rapid mixers, flocculation drives, chlorination equipment, the repair of rapid sand filters, and the initiation of a distribution network leakage control program.

1985-1987: ***Hydraulic software engineer, James M Montgomery (JMM), Consulting Engineers, Pasadena California.*** Led a team of three others in the development and testing of software for hydraulic analysis and design of water and wastewater treatment works. Helped other engineers apply the model successfully in a variety of plants across the US, and established a tradition of model calibration and verification with measurements of flows and levels. Also worked for the company and its clients across the US on surge analysis, distribution network modelling, and general hydraulic troubleshooting.

1982-1984: ***Engineer and Provincial Delegate for UDAAS (Water and Sanitation Agency) in Tete Province, Mozambique***. Initially served as a *cooperante* (technical volunteer paid well below the international scale) in Mozambique at the National Directorate of Water in Maputo, working on studies and designs. After a few months, worked on water and sanitation in Tete, a hot dry and land-locked province in the Northwest. Became the Provincial Delegate for UDAAS, the organization responsible for the water and sanitation needs of a province of 800,000 people and 100,000 sq km. Despite the effective siege of the province during the war, UDAAS managed the completion of two small town water supplies in the province (Matundo and Moatize), and continued the provincial rural water supply program, focused on hand-dug well construction and handpump repairs. Provided technical support for the Tete city water supply (pop 50,000) which failed regularly from a poorly designed and installed groundwater pumping system)

1977-1981: ***Environmental Planner and Sanitary Engineer with Camp Dresser and McKee*** in the US and Egypt. Worked on the preparation of the first Environmental Impact Statement required by the US government outside the United States for a sewerage project in Alexandria, Egypt; over time, became the effective "number two" on the project. Later worked on sewerage planning and design in Alexandria and Cairo, including system-wide planning analyses of network options for both cities. Prepared design reports for sewage pumping systems in Alexandria, and storm drainage for Ras el Soda, a 700 ha slum in Alexandria lying below sea level.

In 1981, served as the first engineer assigned to USAID's Water and Sanitation for Health (WASH) contract for short-term expert consultancy advice to USAID staff around the world. Worked largely on developing terms of reference and recruiting expert consultants in water and sanitation for short-term assistance to USAID projects. The services provided by WASH were sufficiently valued by USAID for the contract to be renewed under various names for over thirty years, and the model served as the basis for the current USAID WASHplus project.

1975-1977: ***Masters in Environmental Engineering at the University of North Carolina*** at Chapel Hill. Performed research and field studies for the World Bank estimating the variation of costs with levels of water supply service in Sana'a, Yemen. The work informed the policy debate within the World Bank and among its clients about the opportunity costs of using a given capital budget to provide high levels of services for some, while others had little or no service.

1973-1974: ***Rural Water Supply Technician, Catholic Relief Services, Madagascar.*** During a year's leave of absence from Harvard, worked on a rural water supply project jointly funded by Church World Service and Catholic Relief Services. With another engineer, designed and supervised community construction of three spring-fed village water supply systems. Learned first hand the fundamental importance of water supply in the everyday lives of the poor and the critical roles of social, political and institutional issues in water supply. Also learned that while design and community construction of rural water supply was demanding, the greater (unmet) challenge was that of institutional development for sound operation, maintenance and repair for what is now called *operational sustainability.*

SELECTED PUBLICATIONS

(i) Books

Kolsky, Pete (1998). **Storm Drainage: An engineering guide to the low-cost evaluation of system performance.** Intermediate Technology Publications, Ltd; London.

(ii) Chapters in edited books or peer-reviewed articles in published proceedings

Bostoen, Kristof, Pete Kolsky and Caroline Hunt. (2007) "Improving urban water and sanitation services: Health, access and boundaries." Chapter 5 in **Scaling Urban Environmental Challenges: From Local to Global and Back**, ed. By Peter J. Marcotullio and Gordon McGranahan, Earthscan: London. (also reprinted in 2009 by the US Institute of Medicine as part of Chapter 4 in its report **Global Issues in Water, Sanitation and Health: Workshop Summary**.)

Kolsky, P.J., J.N. Parkinson, D. Butler, (1996). ***Third World Surface Water Drainage: The Effect of Solids on Performance,*** Chapter 14 in *Low-Cost Sewerage* edited by D.D. Mara, (pp. 189-214.) Wiley: Chichester. This textbook is based on papers from the International Conference on Low-Cost Sewerage held at the University of Leeds in July 1995.

Kolsky, P.J., J.N. Parkinson, D. Butler, T.A Sihorwala (1996.) ***Drainage without Drains? Performance Studies in India and their Implications****, Proceedings of the Seventh International Conference on Urban Storm Drainage* (Hannover Germany, September 1996**.**) edited by F. Sieker and H-R Verworn, pp 521-526. SuG-Verlagsgesellschaft: Hannover.

Kolsky, P.J. & Cotton AP. (1996). ***Educating Engineers in Water and Sanitation****,* Chapter 12 (pp 136-148) Chapter 12 in *Educating for Real: the training of professionals for development practice*, ed. by Nabeel Hamdi. Intermediate Technology Press: London. This book chapter is based on an invited paper at the 12th Inter-schools Conference, held at Oxford-Brookes University in 1995.

Kolsky, P.J., Butler, D., and Sihorwala, T (1993). ***Performance Based Evaluation of Urban Drainage in Developing Countries****,* Proceedings of the Sixth International Conference on Urban Storm Drainage (Niagara Falls, Canada, September 1993). ed by J. Marsalek and H.C. Torno. Seapoint Publishing: Victoria, BC.

Kolsky, Peter J. and Friedman, G (1986), ***Computer-Aided Analysis of Treatment Plant Hydraulics****,* Proceedings, Water Forum '86 Conference of the American Society of Civil Engineers, pp 1106-1113, Aug 1986.

(iii) Peer-reviewed articles or correspondence in journals

Kolsky, Pete and David Butler (2002). "Performance indicators for urban storm drainage in developing countries", *Urban Water* **4:**2, (137-144).

Kolsky, P.J. and D. Butler (2000). "Solids size distribution and transport capacity in an Indian Drain", (Technical note), *Urban Water*, **2**:4, (357-362).

Kolsky, P. Butler, D., Cairncross, S., Blumenthal, U.J., and Hosseini, M (1998). "Modelling drainage performance in slums of developing countries: How good is good enough?"*, Water Science & Technology***, 39:**9, (285-292).

Cairncross, S & Kolsky, P.J. (1997). "Water, waste, and well-being: a multicountry study" (letter]. *American Journal of Epidemiology.* **146**:4, (359-61).

Kolsky, P.J., & U.J. Blumenthal (1995). "Environmental health indicators and sanitation-related disease in developing countries: limitations to the use of routine data sources", *World Health Statistics Quarterly~* **48**:2 (132-139).

Kolsky, P.J. (1993). "Water, Sanitation and Diarrhoea: The Limits of Understanding", *Transactions of the Royal Society of Tropical Medicine and Hygiene* (1993) **87**, Supplement 3, (pp 43-46).

Lauria, D.T., Kolsky, P.J., and Middleton, R.N. (1978) "Design of Water Systems for Developing Countries", *Progress in Water Technology*, **11**:113, (pp 151-157).

(Iv) Published research reports/discussion papers

Trémolet Sophie, Pete Kolsky, and Eddy Perez, (2009). **Financing On-Site Sanitation for the Poor: A Six Country Comparative Review and Analysis,** Water and Sanitation Program, Washington DC.

Kolsky Pete, Eddy Perez, Wouter Vandersypen and Lene Odum Jennsen (2005). **Sanitation and Hygiene at the World Bank: An analysis of current activities**. Water Supply and Sanitation Working Note No. 6, World Bank: Washington DC.

Cave, Ben and Pete Kolsky (1999), **Groundwater Latrines and Health**, WELL Resource Centre in Water and Environmental Health, (LSHTM/WEDC) London.