


Committee on Energy and Commerce
U.S. House of Representatives
Witness Disclosure Requirement - "Truth in Testimony"
Required by House Rule XI, Clause 2(g)(5)

1. Your Name: Nidhi Kalra		
2. Your Title: Senior Information Scientist and Codirector of the RAND Center for Decision Making under Uncertainty		
3. The Entity(ies) You are Representing: RAND Corporation		
4. Are you testifying on behalf of the Federal, or a State or local government entity?	Yes	No X
Please list any Federal grants or contracts, or contracts or payments originating with a foreign government, that you or the entity(ies) you represent have received on or after January 1, 2015. Only grants, contracts, or payments related to the subject matter of the hearing must be listed. None		
5. Please attach your curriculum vitae to your completed disclosure form.		

Signature:  Date: 2/13/17

Nidhi Kalra

CONTACT

Email: nkalra@rand.org

Voice: (412) 532-6439

Address: RAND Corporation, 1776 Main Street, Santa Monica, CA 90401

Web: http://www.rand.org/about/people/k/kalra_nidhi.html

BIOGRAPHY



Nidhi Kalra, Ph.D. is a senior information scientist at the RAND Corporation and spearheads RAND's autonomous vehicle policy work. She is the lead author of the study "Driving to Safety: How Many Miles of Driving Would It Take to Demonstrate Autonomous Vehicle Reliability? (2016)" and co-author of the flagship report "Autonomous Vehicle Technology: A Guide for Policymakers (2016)." She has over ten years of experience in autonomous vehicle policy and is committed to using her expertise to further evidence-based discourse and decision making. She is a member of the California Road Charge Technical Advisory Committee, which provides guidance to the State legislature on road use charge alternatives to the gas tax. She has also authored and is cited in many media articles and programs and recently gave a TEDx talk on sound long-term decision making (<https://goo.gl/qcEkVe>).

As a director of RAND's Center for Decision Making under Uncertainty, her research addresses a variety of long-term transportation, energy, environment, and science and technology policy issues. In 2013, she served as a senior decision scientist in the Office of the Chief Economist of Sustainable Development at the World Bank. Her clients include the U.S. National Cooperative Highway Research Program, the Federal Highway Administration, the California Energy Commission, and the Department of Defense. Kalra developed educational technology tools to promote literacy among blind children in India, a project that recently received the Louis Braille Touch of Genius Prize for Innovation. Kalra received her Ph.D. in robotics from Carnegie Mellon University's Robotics Institute.

CURRENT POSITION

February 2014-Present

Senior Information Scientist, RAND

Director, Center for Decision Making Under Uncertainty, RAND

Professor, Pardee RAND Graduate School

Leads large multi-disciplinary teams on groundbreaking research on water resource management, autonomous vehicle policy, and long-term planning in climate change, flood risk management, transportation, and other sectors.

EDUCATION

Ph.D., Robotics, 2006

Robotics Institute, Carnegie Mellon University

M.S., Robotics, 2004

Robotics Institute, Carnegie Mellon University

B.S., Computer Science, 2002

Cornell University

PRIOR EXPERIENCE

Senior Decision Scientist

February 2013 – February 2014

World Bank, Washington, D.C.

Spearheaded World Bank's use of methodologies for decision making under uncertainty through pilot studies, policy guidance, methodology development, and innovative training

Information Scientist

February 2007 – February 2013

RAND Corporation, Santa Monica, CA

Led large multi-disciplinary teams to address pressing national and international science and technology policy challenges in autonomous vehicles and other transportation technology, climate change, water, and energy

Visiting Researcher

September – December, 2005

École Polytechnique Fédérale de Lausanne, Switzerland

Lecturer and researcher in multi-robot systems

- PROFESSIONAL ACTIVITIES** Member, California Road Charge Technical Advisory Committee (2016-Present)
Editor, Transportation Research Part A Special Issue on Autonomous Vehicles (2015-Present)
Lead Organizer, Society for Decision Making Under Deep Uncertainty (2014-2015)
Lead Organizer, First, Second, and Fourth Workshops on Decision Making Under Deep Uncertainty (2013, 2014, 2016)
Communications Chair, TRB Committee on Transportation and Sustainability (2012-2014)
- SELECTED RESEARCH PUBLICATIONS**
- Kalra, Nidhi and Susan M. Paddock, Driving to safety: How many miles of driving would it take to demonstrate autonomous vehicle reliability?, *Transportation Research Part A: Policy and Practice*, Volume 94, December 2016, Pages 182-193, ISSN 0965-8564, <http://dx.doi.org/10.1016/j.tra.2016.09.010>.
- Kalra, Nidhi and Susan M. Paddock. *Driving to Safety: How Many Miles of Driving Would It Take to Demonstrate Autonomous Vehicle Reliability?* Santa Monica, CA: RAND Corporation, 2016. http://www.rand.org/pubs/research_reports/RR1478.html.
- Lachman, Beth E., Susan A. Resetar, Nidhi Kalra, Agnes Gereben Schaefer and Aimee E. Curtright. *Water Management, Partnerships, Rights, and Market Trends: An Overview for Army Installation Managers*. Santa Monica, CA: RAND Corporation, 2016. http://www.rand.org/pubs/research_reports/RR933.html.
- Kalra, Nidhi, David G. Groves, Laura Bonzanigo, Edmundo Molina Perez, Cayo Ramos, Carter Brandon, and Ivan Rodriguez Cabanillas. *Robust Decision-Making in the Water Sector A Strategy for Implementing Lima's Long-Term Water Resources Master Plan*, World Bank Report No: AUS3381, June 24, 2015.
- Kalra, Nidhi. *To Hit the Road, Driverless Cars Must Be Safe, Not Perfect*, New York Times, January 29, 2015. <http://www.nytimes.com/roomfordebate/2015/01/29/are-we-ready-for-driverless-cars/to-hit-the-road-driverless-cars-must-be-safe-not-perfect>
- Anderson, James M., Nidhi Kalra, Karlyn D. Stanley, Paul Sorensen, Constantine Samaras and Oluwatobi Oluwatola. *Autonomous Vehicle Technology: A Guide for Policymakers*. Santa Monica, CA: RAND Corporation, 2014. http://www.rand.org/pubs/research_reports/RR443-1. Also available in print form.
- Kalra, Nidhi and Hallegatte, S. and Lempert, Robert and Brown, Casey and Fozzard, Adrian and Gill, Stuart and Shah, Ankur, *Agreeing on Robust Decisions: New Processes for Decision Making Under Deep Uncertainty*. World Bank Policy Research Working Paper No. 6906, June 1, 2014 Available at SSRN: <http://ssrn.com/abstract=2446310>
- Groves, David G., Jordan R. Fischbach, Nidhi Kalra, Edmundo Molina-Perez, David Yates, David Purkey, Amanda Fencl, Vishal K. Mehta, Ben Wright and Grantley Pyke. *Developing Robust Strategies for Climate Change and Other Risks: A Water Utility Framework*. Santa Monica, CA: RAND Corporation, 2014. http://www.rand.org/pubs/research_reports/RR977.
- Anderson, James M., Nidhi Kalra, Karlyn D. Stanley, Paul Sorensen, Constantine Samaras and Oluwatobi Oluwatola. *Autonomous Vehicle Technology: How to Best Realize Its Social Benefits*. Santa Monica, CA: RAND Corporation, 2014. http://www.rand.org/pubs/research_briefs/RB9755.
- Bonzanigo, Laura and Kalra, Nidhi, *Making Informed Investment Decisions in an Uncertain World: A Short Demonstration*, World Bank Policy Research Working Paper No. 6765, 2014. Available at SSRN: <http://ssrn.com/abstract=2390370>

- Popper, S. et al., *Expediting Future Technologies for Enhancing Transportation System Performance*, NCHRP Report 750: Strategic Issues Facing Transportation / (Washington, D.C.: Transportation Research Board, 2013), v. 3, 119 p
- Lachman, Beth E. et al., *Key Trends That Will Shape Army Installations of Tomorrow*, Santa Monica, CA: RAND Corporation, 2013.
<http://www.rand.org/pubs/monographs/MG1255>.
- Lempert, R., et al, *Making Good Decisions Without Predictions* (No. RB-9701), Research Brief. RAND Corporation, 2013.
- Lempert, R., et al., *Ensuring Robust Flood Risk Management in Ho Chi Minh City*, World Bank, Policy Research Working Paper, WPS 6465, 2013.
- Kalra, N., et al. *Reference Sourcebook for Reducing Greenhouse Gas Emissions from Transportation Sources*, Federal Highway Administration Report, DTHF61-09-F-00117, U.S. Department of Transportation, 2012.
- Lempert, R.J. and N. Kalra, *Managing Climate Risks in Developing Countries with Robust Decision Making*. World Resources Report, 2011.
- Kalra, N., et al. *Recommended Research Priorities for the Qatar Foundation's Environment and Energy Research Institute*. Santa Monica, CA: RAND Corporation, 2011.
- Marsh, J. A., et al. *A Big Apple for Educators: New York City's Experiment with Schoolwide Performance Bonuses: Final Evaluation Report*. Santa Monica, CA: RAND Corporation, 2011. [WINNER — 2012 Outstanding Policy Report (Short Report) Division L, American Educational Research Association (AERA)]
- Bikson, T. K., et al. *Steps Toward a Formative Evaluation of NSDL*. Santa Monica, CA: RAND Corporation, 2011.
- Libicki, Martin C., et al., *Should Global Force Management Information Be Classified?* Santa Monica, CA: RAND Corporation, 2010.
http://www.rand.org/pubs/research_briefs/RB9564.
- Libicki, Martin C., et al., *What Should Be Classified? A Framework with Application to the Global Force Management Data Initiative*. Santa Monica, CA: RAND Corporation, 2010. <http://www.rand.org/pubs/monographs/MG989>. Also available in print form.
- Kalra, N., J.A. Anderson, and M. Wachs. *Liability and Regulation of Autonomous Vehicle Technologies*, California PATH Research Report, UCB-ITS-PRR-2009-28, University of California at Berkeley, 2009.
- Kalra, N., et al. "Design of a Braille Writing Tutor to Combat Illiteracy," *Information Systems Frontiers*, Vol. 11, No. 2, 2009.
- Kalra, N. D. Ferguson, and A. Stentz. "Incremental Reconstruction of Generalized Voronoi Diagrams on Grids," *Robotics and Autonomous Systems*, Vol. 57, No. 2, February, 2009.
- Pane, J., et al. "Effects of Student Displacement in Louisiana During the First Academic Year After the Hurricanes of 2005," *Journal of Education for Students Placed at Risk*, Vol. 13, Issue 2, pp. 168—211, 2008.
- Kalra, N. *A Market-Based Framework for Tightly-Coupled Planned Coordination in Multirobot Teams*. PhD thesis, Robotics Institute, Carnegie Mellon University, Pittsburgh, PA, December 2006.
- Dias, M.B., et al. "Market-Based Multirobot Coordination: A Survey and Analysis," *IEEE Special Issue on Multirobot Systems*, vol. 94, pp. 1257 – 1270, July 2006.

**SELECTED
COMMENTARY**

Kalra, Nidhi. When Will We Know Self-Driving Cars Are Safe? *Newsweek*, September 25, 2016

Kalra, Nidhi. Why It's Nearly Impossible to Prove Self-Driving Cars' Safety Without a New Approach, *Dallas Morning News*, April 28, 2016

Kalra, Nidhi. Fatal Crash Shouldn't Kill Self-Driving Cars, *USA Today*, July 15, 2016

Kalra, Nidhi. With Driverless Cars, How Safe Is Safe Enough?, *USA Today*, January 31, 2016

Kalra, Nidhi. What If? The Key to Making Good Decisions, TEDx Manhattan Beach, November 5, 2015.

Bonzanigo, Laura, Nidhi Kalra, David G. Groves, and Carter Brandon. Ensuring Robust Water Management Strategies in Lima-Callão, Peru, *World Bank Water Blog*, October 19, 2015.

Kalra, Nidhi. To Hit the Road, Driverless Cars Must Be Safe, Not Perfect, *New York Times*, January 29, 2015

Kalra, Nidhi and Laura Bonzanigo. Making Informed Investment Decisions in an Uncertain World, *The World Bank Let's Talk Development Blog*, February 28, 2014.