

Curriculum Vitae

ARMEN DER KIUREGHIAN
Taisei Chair Professor of Civil Engineering
Department of Civil & Environmental Engineering
University of California at Berkeley

Born: October 4, 1947, Isfahan, Iran
Naturalized: U.S. Citizen, June 18, 1985

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Education

B.S. Teheran University, Iran, Civil Engineering, 1970
M.S. Teheran University, Iran, Civil Engineering, 1971
Ph.D. University of Illinois at Urbana-Champaign, Civil Engineering, 1975

Honors and Awards

1971 Valedictorian, Civil Engineering Class of 1971, Teheran University, Iran
1983 Research Fellowship, Japan Society for Promotion of Science, June 1 to July 31, 1983
1988 ASCE Walter L. Huber Civil Engineering Research Prize for "research on development of probabilistic methods for seismic hazard analysis, dynamic response of structures and secondary systems, and structural reliability"
1989 Fulbright Distinguished Professor Lectureship, Univ. of Ljubljana, Slovenia
1989 Mitsubishi Heavy Industry Visiting Chair Professorship, Univ. of Tokyo, Japan, September 1 to December 31, 1989
1990 Achievement Award, Armenian Professional Society of Bay Area "in recognition of his service and dedication to further excellence in education among Armenians"
1991 Certificate of Appreciation, UC Berkeley Alumni Association "for distinguished service to the UC Berkeley Armenian Alumni Association"
1994 Elected Foreign Member, Armenian National Academy of Engineering
1996 Man of the Year, Armenian Professional Society of Los Angeles "for his tireless dedication to advancing higher education in Armenia and the United States and for his commitment to serving the Armenian communities in the Diaspora"
1997 Citizen of the Year, Armenian-American Citizens' League for "outstanding support of the Armenian community" San Francisco, CA
1998 Elected Foreign Member, Armenian National Academy of Sciences
1999 Taisei Chair in Civil Engineering, University of California, Berkeley
1999 CERRA Award, Civil Engineering Risk and Reliability Association "for outstanding contributions to the theory of structural reliability."
2001 *Movses Khorenatsi* medal, Government of Armenia "for contributions made for advancing higher education in Armenia"

- 2003 Plaque of Appreciation, Armenian Association for Earthquake Engineering “in recognition of his significant contribution to the development of seismic isolation technology in Armenia”
- 2004 Distinguished Alumnus Award, Tehran University, Iran
- 2006 Distinguished Alumnus Award, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, IL for “his contributions to the development of probabilistic and statistical methods applied to the solution of structural, civil and earthquake engineering problems, and for his dedicated efforts in assisting with the establishment of the American University of Armenia.”
- 2006 Alfred M. Freudenthal Medal, American Society of Civil Engineers, for “research contributions in the areas of structural and system reliability, risk analysis and random vibrations.”
- 2006 Thomas A. Middlebrooks Award, American Society of Civil Engineers, for paper: Cetin, K.O., R. B. Seed, A. Der Kiureghian, K. Tokimatsu, L. F. Harder, Jr., R. E. Kayen, and R.E.S. Moss (2004). SPT-based probabilistic and deterministic assessment of seismic soil liquefaction potential. *J. Geotechnical and Geoenvironmental Engineering*, ASCE, **130**(12): 1314-1340.
- 2007 Best Paper Award, American Society of Civil Engineers, for: Haukaas, T., and A. Der Kiureghian (2007). Methods and object-oriented software for FE reliability and sensitivity analysis with application to a bridge structure. *Journal of Computing in Civil Engineering*, ASCE, **21**(3):151-163.
- 2011 Elected Member, US National Academy of Engineering for "his contributions to risk and reliability and earthquake engineering to advance the practice of civil and structural engineering."

Academic Experience

- 1999- Taisei Chair Professor of Civil Engineering, University of California, Berkeley.
- 1978-99 Dept. of Civil & Environmental Engineering, Univ. of California, Berkeley: Asst. Prof. (1978-81), Assoc. Prof. (1981-85), Prof. (1985-99); Vice Chair (1990-93) and Chair (1997-2001) Structural Engineering, Mechanics & Materials Program; Vice Chair for Instruction, CEE Department (2007-2009).
- 1991-07 Dean, College of Engineering, American University of Armenia, Yerevan (an affiliate of the University of California).
- 1991-04 Director, Engineering Research Center, American University of Armenia.
- 2002- Member of Academic Staff, European School for Advanced Studies in Reduction of Seismic Risk (Rose School), Pavia, Italy.
- 1975-78 Asst. Prof., Dept. of Civil Eng., Univ. of South. California, Los Angeles.

Visiting Positions

- 1989 Fulbright Visiting Professor, University of Ljubliana, Slovenia, May.
- 1989 Visiting Professor, Mitsubishi Heavy Industry Chair, Univ. of Tokyo (Research Center for Advanced Science and Technology), Japan, Sep. 1 to Dec. 31.
- 2003- Visiting Professor, ROSE School (Center for Post-Graduate Training and Research in Earthquake Engineering and Engineering Seismology), Pavia, Italy. Taught courses in 2004 and 2009.
- 2004 Visiting Professor, Department of Mechanical Engineering, Technical University of Denmark, Lyngby, August 1 to October 31.

- 2005 Visiting Professor, Indian Institute of Science, Bangalore, India, Dec. 11-28.
 2008- Visiting Chair Professor, National Taiwan University of Science and Technology, October 2008-.

Industrial Experience

- 1970-71 Site Engineer, Ekbatan-Assad Construction Co., Teheran, Iran
 1976-78 Consulting Associate, Agbabian Associates, El Segundo, CA
 1977- Engineering consulting through ADK & Associates. Recent clients include Rockwell International (now Boeing) on debris impact risk analysis for spacecraft; McDonnell Douglas on proof testing of a pressurized wind tunnel; Kistler Aerospace on risk assessment for satellite launch operations, American Lifeline Alliance on loss estimation for water distribution systems; Lockheed Martin on dynamics of stochastic systems; AMEC-Geomatrix Consultants on stochastic optimization of water resources management; MMI Engineering on reliability of offshore wind turbines.

Teaching

Undergraduate courses on engineering data analysis (CE93) and engineering risk analysis (CE193). Graduate courses on structural and system reliability (CE229) and stochastic structural dynamics (CE226).

Research

The study and development of probabilistic methods in structural, civil and earthquake engineering: seismic hazard analysis (1974-), earthquake response spectra (1975-), stochastic load combination (1977-), random vibration of linear and nonlinear systems (1978-), seismic reliability and upgrading of lifeline networks (1978-), dynamic analysis of secondary and tertiary subsystems (1979-), structural and system reliability (1980-), stochastic modeling of earthquake ground motions (1981-), computational stochastic mechanics and finite-element reliability methods (1982-), Bayesian statistics and model estimation (1989-), response of multiply-supported structures to spatially varying ground motions (1990-), stochastic modeling and response prediction of micro-electro-mechanical systems (1991-), reliability-based optimal design (1994-), seismic fragility of structural components and systems (1997-), mechanical modeling of helically wrapped cables (1999-), seismic analysis and reliability of electrical substation equipment and system (1999-); infrastructure risk management by use of Bayesian networks (2006-).

Academic Service (selected)

- Chair, Academic Senate Committee on International Education, 2001-2004
 Chair, Advisory Committee on Armenian Studies, College of Letters and Science, 1994-2004, 2008-
 Member, Review Committee, Department of Industrial Engineering and Operations Research,
 Member, UC Systemwide Academic Council Committee on Education Abroad Program, 2001-2004
 Member, Academic Senate Committee on Educational Policy, 2000-2002, 2005-2008
 Member, USA PATRIOT Act Steering Committee, 2002-03
 Member, USA PATRIOT Act Task Force on International Students and Scholars, 2003-04
 Member representing College of Engineering, Joint Academic Senate-Administration Faculty Advisory Committee on Undergraduate Student Learning Initiative (USLI), 2008-09

Member, Undergraduate Study Committee, College of Engineering, 2007-2009
Member, Graduate Study Committee, College of Engineering, 2007-2009
Member, Executive Committee, Department of Civil & Environmental Engineering, 1997-2001, 2007-2009
Chair, Water Quality Faculty Search Committee, Department of Civil & Environmental Engineering, 1999-2000
Chair, Strategic Planning Committee, Department of Civil & Environmental Engineering, 2003-04
Chair, Curriculum Committee, Department of Civil & Environmental Engineering, 2007-09
Head Adviser, Department of Civil & Environmental Engineering, 2007-09

Professional and Scholarly Society Membership

American Society of Civil Engineers, member since 1975
Committee on Safety of Nuclear Structures, STD, 1979-83
Committee on Safety of Buildings, STD, 1979-84, Control Group 1986-90
Committee on Probabilistic Methods, EMD, 1980-88, 2003-, Vice Chair, 1983-84, 86-87; Chair, 1984-86
Committee on Programs, EMD, 1984-86
Committee on Seismic Risk, TCLEE, 1981-
Earthquake Engineering Research Institute, member since 1979
Member, U.S. Scientific and Engineering Reconnaissance Team, Armenia Earthquake of December 7, 1988
Associate Editor, *Earthquake Spectra*, 2002-2008
Seismological Society of America, member since 1975
CERRA (Civil Engineering Risk and Reliability Association)
Chairman, 1999-03, President, 2003-2007, Past-President, 2007-
IASSAR (International Association for Structural Safety and Reliability)
Committee on Stochastic Methods in Structural Engineering
Subcommittee on Computational Stochastic Mechanics
Subcommittee on Structural Reliability and Optimization, 1986-, Chair 2001-
IFIP (International Federation for Information Processing)
Working Group 7.5 on Reliability and Optimization of Structural Systems, 1986-
CUREE (Consortium of Universities for Research in Earthquake Engineering)
UC Berkeley Institutional Representative, 1998-04
Secretary, Board of Directors, 2000-01
Treasurer, Board of Directors, 2001-04
Armenian Association for Earthquake Engineering, member since 2002

Organization of Conferences and Short Courses

Co-Chairman, Program Committee, ASCE Specialty Conference II on Current State-of-the-Art of Lifeline Earthquake Engineering, Oakland, CA, 1981.
Coordinator, Short Course on "Structural Reliability: Theory and Applications," University of California, Berkeley, CA, March 1983.
Chairman, Organizing Committee, 4th ASCE EMD/STD/GTD Specialty Conference on Probabilistic Mechanics and Structural Reliability, Berkeley, CA January 1984.
Coordinator, Short Course on "Structural Reliability: Methods and Applications," University of California, Berkeley, CA, April 1989.

Chairman, Organizing Committee, 5th International Conference on Structural Safety and Reliability, San Francisco, CA, August 1989.

Co-Chairman, 3rd IFIP Working Conference on Reliability and Optimization of Structural Systems, Berkeley, CA, March 1990.

Member, Steering Committee, 4th International Conference on Seismic Zonation, Stanford University, Stanford, CA, August 1991.

Member, International Organizing Committee, International Conference on Continental Collision Zone Earthquakes and Seismic Hazard Reduction, Yerevan, Armenia, October 1993.

Chair, Organizing Committee, UCB-CUREE Symposium Honoring R. Clough and J. Penzien, Berkeley, CA, May 9-11, 2002.

Co-Chair, Eighth World Seminar on Seismic Isolation, Energy Dissipation and Active Vibration Control of Structures, Yerevan, Armenia, October 6-10, 2003.

Chair, Steering Committee, Co-Chair, Program Committee, 9th International Conference on Applications of Statistics and Probability in Civil Engineering, San Francisco, CA, July 2003.

Editorial and Review Activities

Editorial boards:

Journal of Engineering Mechanics, ASCE (1984-86, Vice Chair, 1985-86)

Probabilistic Engineering Mechanics, 1988-

Structural Safety, 1991-

Journal of Seismology and Earthquake Engineering, 1999-

Earthquake Spectra, 2002-

Earthquake Engineering & Structural Dynamics, 2003-

Guest Editor, Special Issue on Earthquake Engineering for Electric Power Equipment and Lifeline Systems, Vol. 36, Issue 2, 2007.

International Journal of Engineering under Uncertainty, 2008-

Mechanics, National Academy of Sciences of Armenia, 2009-

Reliability Engineering & System Safety, 2010-

Book reviewer for McGraw-Hill, John Wiley & Sons, Longman Scientific and Technical Publishers, Prentice Hall, Springer, Oxford University Press.

Proposal reviews and peer review panels for the U.S. National Science Foundation, U.S. Geological Survey, CUREE, NASA Lewis Research Center, International Science Foundation, Canada Research Council, Danish Technical Research Council, Research Grants Council of Hong Kong, Austrian Science Fund, Swiss National Science Foundation.

Graduate Students Supervised

Faramarz Ansari, M.Eng., 1981, "Static analysis of structures with uncertain properties and subjected to random loads."

Wiggo Smeby, Ph.D., 1982, "Stochastic analysis of response of structures and multiply supported secondary systems to multi-directional ground motion."

Masoud M. Zadeh, Ph.D., 1982, "Seismic reliability assessment of structural systems and lifeline networks."

Takeru Igusa, Ph.D., 1983, "Dynamic analysis of multiply tuned and arbitrarily supported secondary systems."

- Alejandro Asfura, Ph.D., 1984, "A new floor response spectrum method or seismic analysis of multiply supported secondary systems."
- Paul G. Luckman, Ph.D., 1987, "Slope stability assessment under uncertainty: a first-order stochastic approach" (co-chaired by Professor Nicholas Sitar).
- Rodrigo Araya, Ph.D., 1988, "Seismic hazard analysis: improved models, uncertainties and sensitivities."
- Jorge Crempien, Ph.D., 1988, "A time-frequency evolutionary model for earthquake motion and structural response."
- Ajay Prakash, M.Eng., 1989, "Generation of floor response spectra directly in terms of the design ground motion spectra."
- Pei-Ling Liu, Ph.D., 1989, "Finite element reliability methods for geometrically nonlinear stochastic structures."
- Chih-Dao Wung, Ph.D., 1989, "Computer-assisted learning system for Stochastic dynamic analysis of structures."
- Yutaka Tanaka, M.Eng., 1990, "Stochastic site vibration analysis by the finite element method."
- Steven Grover, M.S., 1990, "Reliability-based structural optimization."
- Jyh-Bin Ke, Ph.D., 1990, "Finite element reliability analysis for plane structures."
- Ansgar Neuenhfer, M.S., 1991, "An investigation of modal and support motion cross-correlations for multiply supported structures subjected to seismic excitation."
- Hong-Zong Lin, Ph.D., 1991, "Methods for structural system reliability analysis."
- Yutaka Nakamura, M.S., 1992, "Multiple-support response spectrum analysis of the Golden Gate Bridge."
- Ivo Vanzi, M.S., 1993, "Bayesian assessment of a model for elastomeric rubber for structural isolation."
- Yan Zhang, Ph.D., 1994, "Finite element reliability methods for inelastic structures."
- Dariusz Mirfendereski, Ph.D., 1995, "Probabilistic characterization and response prediction of micro-electro-mechanical systems."
- Taleen Dakessian, M. Eng., 1997, "A method for locating multiple design points in first-order reliability."
- Charles Menun, Ph.D., 1999, "Envelopes for seismic response vectors."
- Chin-Man Mok, Ph.D., 1999, "Conditional reliability analysis of groundwater flow and subsurface contaminant transport." (co-chaired by Professor Nicholas Sitar)
- Paolo Franchin, M.S., 2000, "Model correction method for reliability problems involving integrals of non-Gaussian random fields."
- Petros Keshishian, Ph.D., 2001, "Analysis of interconnected systems accounting for spatial variability of ground motions and soil-structure interaction."
- Mehrdad Sasani, Ph.D., 2001, "Reliability and performance-based design, assessment and Rehabilitation for RC structures located near active faults." (co-chaired by Professors Vitelmo Bertero and Nicos Makris)
- Paolo Gardoni, Ph.D., 2002, "Probabilistic models and fragility estimates for bridge components and systems." (co-chaired by Professor Khalid Mosalam).
- Akahihiro Kusaka, M.Eng., 2002, "Simulation of spatially varying non-stationary ground motions."
- Johannes O. Royset, Ph.D., 2002, "Reliability-based design optimization of series structural systems." (co-chaired by Professor Elijah Polak)

- Heonsang Koo, Ph.D., 2003, “FORM, SORM and simulation techniques for nonlinear random vibrations.”
- Kee-Jeung Hong, Ph.D., 2003, “Dynamic interaction in cable-connected equipment.” (co-chaired by Professor Jerome L. Sackman)
- Terje Haukaas, Ph.D., 2003, “Finite element reliability and sensitivity methods for performance-based engineering.”
- Junho Song, Ph.D., 2004, “Seismic response and reliability of electrical substation equipment and systems.”
- Kazuya Fujimura, Ph.D., 2006, “Tail-equivalent linearization method for nonlinear random vibration.”
- Sanaz Rezaeian, M.S. Plan I, 2006, “Stochastic modeling of earthquake ground motion.”
- Sanaz Rezaeian, Ph.D., 2010, “Stochastic modeling and simulation of ground motions for performance-based earthquake engineering.”
- Michelle Bensi, Ph.D., 2010, “A Bayesian network methodology for infrastructure seismic risk assessment and decision support.”
- Su Min Hwang, M.Eng., 2010, “Wind turbine design based on reliability method.”

External Member on Doctoral Examination Committees

- Anil K. Asthana, Indian Institute of Technology, New Delhi, India, 1987.
- Philippe V. Geyskens, Katholieke Universiteit Leuven, Belgium, 1993.
- Michel Kahan, Ecole Nationale des Ponts et Chaussées, Paris, France, 1996.
- Bryan Folz, University of British Columbia, Vancouver, B.C., Canada, 1997.
- Xiu-Li Guan, The University of Newcastle, Australia, 1998.
- Pieter van Gelder, Delft University of Technology, The Netherlands, 2000.
- Cambier Simon, Ecole Nationale Supérieure d’Arts et Métiers, France, 2000.
- Maurice Pendola, Université Blaise Pascal, Clermont-Ferand, France, 2000.
- Srinivas Sriramula, Indian Institute of Technology at Madras, Chennai, India, 2006.
- Anna Ivanova Olsen, Norwegian University of Science and Technology, Norway, 2006.
- Bruno Sudret, Université Blaise Pascal, Clermont-Ferrand, France, 2007 (Habilitation thesis)

Visiting Scholars, Post-Doctoral Researchers, Visiting Doctoral Students Hosted

- Prof. Tadanobu Sato, University of Kyoto, Japan, 1980-81.
- Dr. Takeru Igusa, University of California, Berkeley, CA, 1983-86.
- Dr. Rafael Blazquez, University of Madrid, Spain, 1986-87.
- Prof. Boris Karapetian, Yerevan Polytechnic Institute, Armenia, 1987.
- Prof. Karl-Heinz Muller, East Germany, 1987.
- Prof. Toshiaki Hisada, University of Tokyo, Japan, 1987-88.
- Prof. Stepan Zargarian, Yerevan Polytechnic Institute, Armenia, 1990.
- Prof. Hiro Kameda, Kyoto University, Japan, 1990.
- Prof. Takakichi Kaneko, Senshu University, Japan, 1990-91.
- Dr. Philippe Geyskens, University of Leuven, Belgium, 1990-91, 1994-96.
- Haikaz Yeghiazarian, Institute of Mechanics, Armenia, 1991-92.
- Inger Kroon, University of Aalborg, Denmark, 1992-93.
- Dr. Ansgar Neuenhofer, University of Aachen, Germany, 1994-95.
- Michel Kahan, Ecole Nationale des Ponts et Chausees, France, 1995.
- Dr. Tetsuya Sasaki, Institute of Industrial Safety, Japan, 1996-97.
- Dr. Joseph Nadeau, University of California, Berkeley, 1996.

Prof. Hyun Moo Koh, Seoul National University, Korea, 1997-98.
 Dr. Kyo-Sub Choi, Nuclear Environment Technology Institute, Korea, 1997-98.
 Prof. Tai-Ping Chang, National Chung-Hsing University, Taiwan, 1997-98.
 Prof. Sergey Ambartsumian, National Academy of Sciences of Armenia, March 1999.
 Joao Paulo Moreira Goncalves, University of Porto, Portugal, 1999.
 Dr. Bruno Sudret, Ecole Nationale des Ponts et Chaussées, France, 1999-2000.
 Professor Ove Ditlevsen, Technical University of Denmark, Miller Visiting Professor, UC Berkeley, January-February 2000.
 Dr. Yuji Takahashi, Waseda University, Japan, January 2000 - March 2002.
 Professor Arvid Naess, Norwegian University of Science and Technology, Trondheim, Norway, September 2000-June 2001.
 Dr. Jean-Marc Bourinet, Ministere de la Defense, France, January 2001-January 2002.
 Anthony Hahnel, INFMA, Clermont-Ferrand, France, February-July 2002.
 Dr. Wonsuk Park, Seoul National University, Korea, August 2003- July 2004.
 Professor Gang Li, Dalian University of Technology, China, April 2006 – March 2007.
 Salvatore Sessa, Università di Napoli ‘Federico II’, Naples, Italy, May 2007 – October 2008.
 Luca Garré, University of Genoa, Italy, January-July 2008.
 Dr. Daniel Straub, Swiss Federal Institute of Technology, Switzerland, May 2006 - November 2008.
 Richard F. Rivera Lugo, U.S. Nuclear Regulatory Commission, August-December 2008.
 Dr. Umberto Alibrandi, University of Messina, Italy, August 2008 –
 Professor Peter Friis-Hansen, Technical University of Denmark, August-October 2008.
 Iason Papaioannou, Technical University of Munich, Germany, January-April 2010.
 Sara Broglio, IUSS-Institute for Advanced Study and University of Pavia, Italy, January-June 2010.

Community and other University Service

KZV Armenian American Day School, San Francisco, member of School Board (1980-82, 87-89, 94-), Vice Chair (1981-82), Chair (1987-89).
 Armenian Professional Society of Bay Area, Scholarship Committee (1983-84), President (1985-86).
 UC Berkeley Armenian Alumni Association, Honorary Member (1982-), Vice President (1984-86), UCB Faculty Liaison, William Saroyan Armenian Studies Chair Committee (1989-94).
 Advisory Committee on Armenian Studies, UC Berkeley, Chair (1994-2004, 2008-).
 Founding Member, Board of Trustees, American University of Armenia (1991-).
 Member, Board of Trustees, State Engineering University of Armenia (1993-96).