The Future of Emergency Alert and Warning Systems: Research Directions

Committee

Ramesh R. Rao

Chair

Ramesh Rao is Director, UCSD Division of the California Institute for Telecommunications and Information Technology, and QUALCOMM Endowed Chair in Telecommunications at UCSD. Prior to assuming his post in 2001, he was director of UCSD's Center for Wireless Communications. In his capacity as UCSD director of the California Institute for Telecommunications and Information Technology, Professor Rao is also involved on a day-to-day basis with a wide variety of research initiatives, including the development and deployment of sensor networks for civilian as well as homeland security initiatives. He also supervises research on the integration of various wireless standards such as Bluetooth, Wi-Fi (802.11), CDMA and third-generation (3G) wireless networks (CDMA2000, W-CDMA). As a researcher in the wireless field, Rao's contributions include the development of energy-efficient communication techniques to support mobile multimedia users. Rao served on a U.S. Government panel to review the current status of research, development, and applications in wireless communications in the United States, Japan, and Western Europe, with a view towards evaluating the competitive status of U.S. efforts. Rao is a fellow of IEEE, was publications editor of the IEEE's Information Theory Society, and has served on the society's Board of Governors. He also guest edited the IEEE Journal of Selected Areas in Communications special issue on "Multimedia Network Radios,'' in December 1998. Rao has authored over 100 technical papers and contributed two book chapters, and chaired the technical program of the 2015 IEEE GLOBECOM. Rao joined the UCSD faculty in 1984, after receiving his Ph.D. from the University of Maryland, College Park.

James Caverlee

Member

James Caverlee is an Associate Professor in the Department of Computer Science and Engineering at Texas A&M University. His research focuses on web-scale information management, distributed data-intensive systems, and social computing. Most recently, he's been working on spam and crowdturfing threats to social media and web systems; and geo-social systems that leverage large-scale spatio-temporal footprints in social media. Caverlee is a recipient of the 2010 Defense Advanced Research Projects Agency (DARPA) Young Faculty Award, the 2012 Air Force Office of Scientific Research (AFOSR) Young Investigator Award, a 2012 NSF CAREER Award, and has been named a Texas A&M Center for Teaching Excellence Montague-CTE Scholar for 2011-2012. Caverlee received his Ph.D. from Georgia Tech in 2007, M.S. degrees in computer science (2001) and in engineering-economic systems & operations research (2000) from Stanford University, and a B.A. in economics from Duke University (1996, magna cum laude).

Roop K. Dave

Member

Roop K. Dave is head of government initiatives Media Lab Asia (Government of India) and adviser (ICT and Disaster Management) to various state administrations. He also served as senior specialist for disaster management policy and plans with the Indian National Disaster Management Authority (NDMA). His expertise relates to disaster management and applications of IT for disaster management and economic development. Dave has served as a technical expert on various disaster and emergency alert and warning system committees / task force in India. He has also been involved in the development and management of Indian national policies around spectrum management, ICT deployment for eGovernance and disaster management. Dave received his Ph.D. in emergency and disaster management from Gujarat University, an M.S.H.S. in emergency management from Touro International University, an MBA, and a B.E. in electronics and communication.

Eve Gruntfest

Member

Eve Gruntfest is a professional research associate at the Resilient Communities Institute at Cal Poly in San Luis Obispo, CA. She is professor emerita in the Geography and Environmental Studies Program at the University of Colorado, Colorado Springs where she was a faculty member from 1980-2007. She is a Ph.D. geographer who has been working in the field of natural hazard mitigation for 40 years. She has published widely and is an expert in the areas of warning systems, flash flooding and integrating social science into atmospheric science. From 2012- 2013, she was a program officer in the Atmospheric and Geospace Sciences Division at National Science Foundation. In 2014, the Association of American Geographers gave her the Gilbert F. White Service Award, and in 2009 the American Meteorological Society honored her with the Kenneth E. Spengler Award.
From February 2010-July 2011, Dr. Gruntfest was an invited research scholar at the Laboratoire d'étude des Transferts en Hydrologie et Environnement in Grenoble. She served as a member of the National Oceanic and Atmospheric Administration's Science Advisory Board from 2010-2013. She served on five National Research Council committees. Between 2008 and 2011, she directed the SSWIM initiative (Social Science Woven into Meteorology) at The National Weather Center in Norman, OK. From 2005-2006, Dr. Gruntfest was a research scientist at NCAR (National Center for Atmospheric Research) where she co- founded the WAS * IS movement (Weather and Society Integrated Studies). She has been an invited expert at The Weather Channel and is featured in two flash flood documentaries.

Brooke Liu

Member

Brooke Liu is an associate professor of communication at the University of Maryland. Her research investigates how effective risk and crisis communication can optimally prepare the public to respond to and recover from disasters. In recent years, her research has focused on the potentially unique roles that governments’ social and mobile media can play in building community resilience. Liu leads the Risk Communication & Resilience Research Program at the National Consortium for the Study of Terrorism and Responses to Terrorism (START), a U.S. Department of Homeland Security Center of Excellence headquartered at the University of Maryland. In 2013, Liu directed the launch of START’s Training in Risk and Crisis Communication (TRACC) program, which aims to enhance community resilience through sharing the science and theories behind effective risk and crisis communication. She has also led START research teams evaluating how individuals use, behave, and interpret disaster information via social and traditional media and the effectiveness of emergency alerts via mobile devices, among other topics. Liu serves as a member of the Food and Drug Administration’s (FDA) Risk Communication Advisory Committee and on the editorial boards for Communication Yearbook, Communication Quarterly, Public Relations Review, Journal of Applied Communication Research, and the Journal of Public Relations Research. Her research has been published in outlets such as Communication Research, Communication Theory, the Handbook of Crisis Communication, Journal of Applied Communication Research, Journal of Communication Management, Journal of Public Relations Research, and Public Relations Review.

Leslie Luke

Member

Leslie Luke is the Deputy Director of the Office of Emergency Management for the Los Angeles County Chief Executive Office. As Deputy Director, he’s responsible for coordinating the day to day operations of the office, overseeing disaster recovery operations and emergency response plan development. Mr. Luke joined Los Angeles County in 2013 after spending 25 years in San Diego County where ten of those years were with their Office of Emergency Services. He has been the Recovery Operational Area lead for five federally declared disasters and numerous State of California declared disasters. He was a member of the FEMA Innovation Team and responded twice following Superstorm Sandy. He has coordinated Continuity of Community Programs with schools including childcare resource centers, faith based organizations, Tribal Nations, Farmworker Care Coalition and developed a local business alliance. He developed an Advance Recovery Program that addresses both short and long term recovery activities. Throughout his career he’s served on and participated with numerous Department of Homeland Security/Federal Emergency Management Agency Task Forces, projects and initiatives. He’s worked closely with the California Office of Emergency Services on various statewide initiatives. He’s a member of the California Emergency Services Association (CESA) and the International Association of Emergency Managers (IAEM). He serves on the IAEM Conference Committee, Chair of the IAEM Diversity Ad Hoc Committee, IAEM Region IX Vice Chair and a member of the CESA Legislative Committee. Mr. Luke holds a Bachelor’s Degree from the Union Institute and University; is a graduate of Harvard Kennedy School and Harvard School of Public Health National Preparedness Leadership Initiative and the Federal Emergency Management Agency’s National Disaster Recovery Framework Leadership Academy.

Dennis S. Mileti

Member

Dennis S. Mileti is professor emeritus at the University of Colorado, Boulder where he served as director from 1994-2003 of the Natural Hazards Center, which is the United States' clearinghouse for social and behavioral science research related to hazards and disasters. He is the author of many publications, most of which discuss societal aspects of hazards and disasters. His book, "Disasters by Design", summarized knowledge in fields of science and engineering regarding natural hazards and disasters, and made recommendations for shifts in national policies and programs. Mileti has worked on a variety of exciting hazards-related projects over the years, including providing oversight to the U.S. Army Corps' investigation of why the levees failed during Hurricane Katrina and the ensuing societal impacts, for which he was awarded the U.S. Army's Civilian Medal of Honor. He was a team leader on the National Institute of Standards and Technology's congressional study of evacuation of the World Trade Center towers on 9/11. He has chaired the Committee on Disasters in the National Research Council of the National Academies of Sciences, Engineering, and Medicine and the Board of Visitors to FEMA's Emergency Management Institute. Mileti also served as a California Seismic Safety Commissioner, and has worked as a consultant in the private, public and legal sectors in matters of emergency management and public risk communication. Mileti is now working with the U.S. Army Corps of Engineers to upgrade warning preparedness practices in the nation's communities located near Corps dams and levees and with the nation of Israel regarding public warnings for operational earthquake forecasts.

Nambirajan Seshadri

Member

Nambirajan Seshadri NAE) recently retired as senior vice president and chief technology officer for Broadband and Connectivity Business at Broadcom Corporation, Irvine, CA. He has been responsible for many of the wireless strategic initiatives at Broadcom Corporation. Prior to joining Broadcom Corporation, he was with AT&T Shannon Labs and Bell Labs where he and his colleagues made a number of pioneering contributions to wireless technology including invention of Space-Time Codes, a fundamental transmission technology that forms the basis of state of the art wireless and cellular systems. He is a co-recipient of the 1999 IEEE Information Theory Society Best Paper Award. His publication on Space- Time codes was chosen by IEEE Communications Society in 2003 as one of the most influential papers published in the past 50 years in IEEE Communications. He is a fellow of IEEE and was elected to the National Academy of Engineering in 2012.

Douglas Sicker

Member

Douglas Sicker is currently the Department Head and Thomas Lord Endowed Professor of Engineering and Public Policy with a joint appointment in the School of Computer Science at Carnegie Mellon University. Doug also serves as the Executive Director of the Broadband Internet Technical Advisory Group (BITAG) and the Chief Strategist of CMMB Vision. Previously, Doug was the DBC Endowed Professor in the Department of Computer Science at the University of Colorado at Boulder with a joint appointment in, and director of, the Interdisciplinary Telecommunications Program. Doug recently served as the Chief Technology Officer and Senior Advisor for Spectrum at the National Telecommunications and Information Administration (NTIA). Doug also served as the Chief Technology Officer of the Federal Communications Commission (FCC) and prior to this he served as a senior advisor on the FCC National Broadband Plan. Earlier he was Director of Global Architecture at Level 3 Communications, Inc. In the late 1990s, Doug served as Chief of the Network Technology Division at the Federal Communications Commission (FCC). Doug is a member of the IEEE, the ACM and the Internet Society. He served as an advisor to the Department of Justice National Institute of Justice; the Chair of the Network Reliability and Interoperability Council steering committee, an FCC federal advisory committee that focuses on network reliability, wire line spectral integrity and Internet peering and interconnection; and an advisor on the Technical Advisory Council of the FCC. He served as a chair in the IEEE P1900 working group and was involved in developing contributions to the Internet Engineering Task Force (IETF). He has served as the chair of several conferences as well as on numerous program committees. Doug has published extensively in the fields of networking, wireless systems, network security and network policy and has maintained a well-funded research program through NSF, DARPA and other sources.

Kate Starbird

Member

Kate Starbird is an assistant professor in the Department of Human Centered Design & Engineering and Director of the Emerging Capacities of Mass Participation Laboratory. Her research sits at the intersection of computer science and social science and falls within the fields of Human-Computer Interaction (HCI) and Computer-Supported Cooperative Work (CSCW). One major focus of her work examines the use of social media during crisis events, specifically looking at how the converging audience (aka, the "crowd") can contribute—and is already contributing—to crisis response efforts. Using a combination of empirical methods, including qualitative, computational and network analysis, Starbird examines both small group and large scale interaction online within the context of disasters and other mass disruption events, studying how digital volunteers and other members of the crowd work to filter and shape the information space. Recently, she has completed several mixed-method studies on how online rumors propagate and are corrected during crisis events.

Charles L. Werner

Member

Charles Werner is the executive director of ParadeRest and senior advisor to the Commonwealth of Virginia in the areas of public safety communications, interoperability, GIS, NG911, and unmanned aircraft. He currently serves as a consultant for The Lafayette Group, who provides supports to the Department of Homeland Security's Office of Emergency Communication, and serves as the Unmanned Aircraft System Program lead for the Albemarle County Sheriff's Office Search and Rescue team. Prior to his current roles, Werner served with the City of Charlottesville VA Fire Department for 37 years, serving as the fire chief his last ten years with the department. He was appointed as fire chief emeritus upon his retirement. He served on the Regional Public Safety Communications System Task Force from 1995-2006 and worked in the National Emergency Communications Plan (NECP) working group to help develop the nation's first emergency communications plan. He chaired the Virginia First Responder Interoperability Working Group from 2002-2003, served has the first chair of the International Association of Fire Chiefs Technology Council (of which he is still a member), served two years as chair of the Department of Homeland Security's SAFECOM Executive committee, and, most recently, was appointed to co-chair the Incident Management Information Sharing Sub Committee. In 2013, he was one of the founders of the National Information Sharing Consortium, where he served two years as Chair of the Board. He is a nationally published author with over 100 published articles and is a subject matter expert and national presenter on issues such as public safety technology, communications, GIS, NG911, interoperability, unmanned aircraft, and leadership.