



LECTURE SERIES

Quality-of-Life Engineering A Paradigm Shift for the 21st Century

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An imminent crisis in healthcare and elder care threatens our economy and quality of life. In addition to the current overextension of healthcare services and sharply rising prices, demographics adversely impact our healthcare system. This year, the first cohort of “baby boomers” will be 60 years old, presaging a massive wave of aging “boomers” that could degrade American health care over the next quarter-century. Cost-effective, high impact technologies for personal health and independent living are urgently needed. I will present an overview of STARPHIL, a multidisciplinary R&D effort and partnership between four UF colleges: Engineering, Medicine, Nursing, and Public

Health and Health Professions. I will go over more details of one of the projects: *Pervasive Computing for Successful Aging*. I will present experience and lessons learned in building “assistive environments” for the elderly and demonstrate some of the challenges faced by crossing disciplines and by working on human-centered research. I will also present ATLAS, a middleware architecture and a sensor platform that supports plug and play and programmability of pervasive spaces. I will show how ATLAS was used to build the Gator Tech Smart House, and how it enabled pervasive application development, data collection, and analysis.

Biography:

Dr. Sumi Helal is Professor in the CISE Department, and Director of its Pervasive and Mobile Computing Laboratory. His research interests span the areas of Pervasive Computing, Mobile Computing and networking and Internet. He has been the Director of Technology Development of the University of Florida Rehabilitating Engineering Research Center (RERC) on Successful Aging, for the past five years. He successfully created technology startups out of his research at UF. He is Founder and Chairman of the Board of Pervasa, Inc. and Founder and President of Phoneomena, Inc. He is co-founder and technical Director of the Gator Tech Smart House, a large ongoing project aiming at creating technological breakthroughs that will allow the Smart Home Concept to be successfully commercialized (inventing the “Smart House in a Box”).

He is a co-founder and an editorial board member of the IEEE Pervasive Computing magazine. He is the Editor of the magazine's column on Standards, Tools and Emerging Technologies. He is also an Associate Editor of the IEEE Transaction on Mobile Computing. He published extensively and is inventor/co-inventor of 16 patents and pending patent applications. He has been a senior member of the Institute of Electrical and Electronics Engineers (IEEE) since October 2002.

Dr. Helal earned his B.E. and M.E. degrees in Computer Science and Engineering from Alexandria University, Egypt, in 1982 and 1985 respectively. He earned his Ph.D. in Computer Sciences from Purdue University in 1991. Before joining the University of Florida, he held academic and industrial research positions at the University of Texas at Arlington, Purdue University and MCC, in Austin, Texas.