ABOUT THE MING HSIEH INSTITUTE

The Ming Hsieh Institute (MHI) is a research institute focused on enhancing academic and research programs within the Ming Hsieh Department of Electrical Engineering. Through supporting innovative activities and hosting top research visitors, MHI positions the department at the forefront of emerging fields within electrical engineering.

43% Research: Supported research projects and workshops initiated by EE faculty
36% Annual Department Events: Developed & organized by MHI to encourage collaboration of faculty, students, and alumni
14% Visitor Program & Seminars: Encourage leading researchers around the world to visit USC, give talks, and work with EE faculty and students
8% Scholar Programs: Award, travel funding, workshop and event support

MHI Leadership
Shri Narayanan, Director
Hossein Hashemi, Co-Director
Bhaskar Krishnamachari, Co-Director
Elise Herrera-Green, Business Administrator

2014-2015 Faculty Advisory Council
Murali Annivaram
Stephen Cronin
Mahta Moghadam
Krishna Nayak
Antonio Ortega
Massoud Pedram

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DISTINGUISHED VISITORS PROGRAM

Dr. Zhisheng Niu Tsinghua University (Principal Investigator: Bhaskar Krishnamachari and Andreas Molisch) Fall 2014. MHI welcomed Zhisheng Niu as its first Distinguished Visiting Fellow. Dr. Niu, from Tsinghua University located in Beijing, is a Professor of EE, Deputy Dean of the School of Information Science and Technology and the Director of Tsinghua-Hilitech Joint Lab on Environmental Harmonious ICT. During his three-week visit, he gave three seminars and collaborated regularly with USC Faculty and Ph.D. students.

Dr. Georgios B. Giannakis University of Minnesota (Principal Investigator: Richard LePage) Spring 2015. Georgios B. Giannakis is a Professor of EE at the University of Minnesota where he holds the ADC Chair in Wireless Telecommunications and serves as Director of the Digital Technology Center. He has broad research interests in signal processing, digital communications and networks. He visited USC in March of 2015 to explore mutual research interests in big data analytics, machine learning and stochastic optimization with applications to the analysis and optimization of communications, power distribution, social and brain networks. While visiting, Dr. Giannakis held two seminar talks, one on Learning Tools for Big Data Analytics and another on Comprehensive State Inference for Cognitive Radio.

MING HSIEH INSTITUTE
PH.D. SCHOLARS

Shermin Arab
Advisor: Sunney Xie
Kunal Datta
Advisor: Hossein Hashemi
Ningfei Huang
Advisor: Michelle Poniszewski
Vasilis Ntranos
Advisor: Guiseppe Caire
Yan Yan
Advisor: Allan Willner

2014-2015 Scholar Highlights

Shermin Arab gave a talk at Columbia University and will begin at Oxford University in 2016 as a Postdoc. Scholar Vasilis Ntranos will begin his Postdoc position in the fall of 2015 at UC Berkeley. Ningfei Huang delivered a talk at the 2015 CIE Meeting that took place in Canada. Using funds from MHI, the 2014-2015 Scholars developed the Entrepreneurship Seminar Series for PhD Students. This seminar series exposed Ph.D. Students to the entrepreneurial side of EE and covered such topics as Intellectual Property and Small Business Ownership.
**EVENTS**

New Ph.D. Student Welcome Dinner – October 14, 2014, Bacaro LA - Annually hosted by EE Student Services, this evening encourages our scholars to become a resource for new students to discover more about the Ming Hsieh Department of EE.

5th Annual EE Research Festival – November 7, 2014, Gerontology Patio & EEB 132 - A day-long event that welcomes the entire USC Viterbi community, alumni and engineering industry representatives. Over 100 undergraduate and graduate students presented their research through poster sessions, demos and oral presentations at this years festival.

EE Ph.D. Commencement Luncheon – May 14, 2015, EEB 132 - A day-long event that welcomes the entire USC Viterbi community, alumni and engineering industry representatives. Over 100 undergraduate and graduate students presented their research through poster sessions, demos and oral presentations at this years festival.

8th Naming Anniversary Event – October 23, 2014, EEB 132 - The year 2014 marked the 8th Naming Anniversary of the Ming Hsieh Department of Electrical Engineering, MHI celebrated this special occasion with a reception honoring donor, Ming Hsieh.

**SEMINARS**

Ming Hsieh Department of EE Retreat – April 11 – April 12, 2015, Hyatt Regency Newport Beach - This retreat brought faculty & Ph.D. students together to discuss the future of Electrical Engineering at USC and beyond. A total of 160 guests attended this Department Retreat.

**RESEARCH**

Nano Material and Device Seminar Series (Principal Investigators: Steve Cronin, Chongwu Zhou, Wei Wu, and Han Wang) Spring 2015 - Present

The Nano Material and Device Seminar Series aims to expose students to cutting-edge research in the field of nanotechnology. Speakers from academia were invited to share their most recent achievements in the nanotech area. This seminar series provided a great opportunity to bring together students familiarizing with cutting-edge technologies and industry experts to discuss recent advancements in the field.

Integrated Systems Seminar Series (Principal Investigator: Hossein Hashemi) Spring 2011-Present

This series targeted faculty and industry participants in integrated systems, circuits, and devices, with a wide range of applications including communication, computation, networking, sensing, and imaging. The Integrated Systems Seminar Series hosted a total of 16 invited speakers during the 2011-13 academic calendar. Prominent speakers from academia and industry spanned various research disciplines including integrated circuits, devices and technologies.

Electrical Engineering Pioneer Series Spring 2014-Present

Developed in the Spring of 2014, by the Ming Hsieh Institute, the EE Pioneer Series focuses on the stories and journeys of the many faculty who have been a crucial part of the growth and evolution of the EE Department over the past several decades. This year’s honorees included Professors John Choma (1/21/2014), Melvin Breuer (1/15/2014), Solomon Golomb (1/17/2014), Robert Helmuth (5/11/2015), and Jerry Meisel (5/5/2015).

CommNets Seminar Series - (Principal Investigator: Rahul Jain) Spring 2011-Present

CommNets is a weekly seminar that brings together faculty and students in communications, networks, and control. One of the primary goals of the series is to expose students in various areas to the work taking place in other areas of engineering. The seminars, open to all, have been very well-attended over the course of the last year, and featured 15 speakers in the 2014-15 academic year from universities across the United States including UCLA, Stanford, UC Berkeley, University of Maryland, and the University of Illinois.

Distinguished Speaker Series on Innovation in Informatics to Address Smart Energy Challenges (Principal Investigators: Viktor Prasanna and Marc Frincu) Fall 2014 - Present

The Informatics series is a new initiative to promote knowledge sharing in the interdisciplinary field of energy informatics, bringing together information technology and energy management. This series was organized to learn about the cutting-edge work in the area that will help the USC Center of Energy Informatics, and help create opportunities to build collaborations and identify funding opportunities.

Medical Imaging Seminar Series (Principal Investigator: Krishna Nayak) Spring 2012 - Present

The MHI-Sponsored Medical Imaging Seminar Series was established in Fall 2012. It’s third year. Three speakers were hosted in the Fall of 2014, Derya Dorgan from Ohio State University, Kelvin Chow, and Pablo Prado, President of One Resonance LLC.

Single Photon Source Testbed for Quantum Computing and Quantum Information Processing (Organizer: Stephen Cronin) Fall 2013 – Fall 2015

The single photon source testbed for quantum computing and quantum information processing aimed to build an electrically-driven single photon source testbed at USC. Results from the research completed were presented at the 19th International Conference on the Science & Application of Nanotubes, Texas A&M University and at the 22nd Electrochemical Society Meeting.

Studies on the Effectiveness of Cellular Technologies in Coping with the Spectrum Crunch (Organizer: A. Molisch) Spring 2015

With growing user data demand and limited available spectrum, there is an impending spectrum crunch and need to improve spectral efficiency. The work addressed in this thematic proposal aimed to examine whether the spectrum crunch can be overcome by using different schemes.

USC Workshop on Future Directions in Controls, Optimization and Networks (Organizer: Petros Ioannou, Rahul Jain, Ursbashi Mitra, and Ashutosh Nayyar) December 18, 2014

This Workshop was designed to draw in the best researchers in Controls, Optimization, and Networks. In a daylong series of presentations these brilliant minds met and discussed the issues surrounding Controls, Optimization and Networks and how to specifically define the direction that the field of Controls is going, in order to meet the new challenges that may appear.