

Alyssa Apstel, Ph.D Director & Chair of ECE at Cornell University

Alyssa Apstel received the B.S. from Swarthmore College in 1995 and the Ph.D. from Johns Hopkins University, Baltimore, MD, in 2002. She joined Cornell University in 2002, where she is currently a Professor and Director of Electrical and Computer Engineering. She was a Visiting Professor at Imperial College, London from 2016-2018.

The focus of her research is on power-aware mixed signal circuits and design for highly scaled CMOS and modern electronic systems. Her current research is on the leading edge of ultra-low power and flexible RF interfaces for IoT.



She has authored or coauthored over 100 refereed publications including one book in related fields of RF mixed signal circuit design, ultra-low power radio, interconnect design and planning, photonic integration, and process invariant circuit design techniques resulting in ten patents. She received best paper awards at ASYNC 2006 and IEEE SiRF 2012, had a MICRO “Top Picks” paper in 2006, received a college teaching award in 2007, received the National Science Foundation CAREER Award in 2004, and was selected by Technology Review Magazine as one of the Top Young Innovators in 2004.

She is a Distinguished Lecturer of IEEE CAS for 2018-2019, and has also served on the Board of Governors of IEEE CAS (2014-2016) and as an Associate Editor of various journals including IEEE Transactions on Circuits and Systems I and II, and Transactions on VLSI. She has also served as the chair of the Analog and Signal Processing Technical committee of ISCAS 2011, is on the Senior Editorial Board of JETCAS, as Deputy Editor in Chief of Circuits and Systems Magazine, and as the co-founder and Chair of ISCAS Late Breaking News.

In 2016, Dr. Apstel co-founded AlphaWave IP Corporation, a multi-national Silicon IP provider focused on multi-standard analog Silicon IP solutions for the world of IOT. As Chief Technology Officer of AlphaWave, Dr. Apstel led the company’s global research capability with offices in Silicon Valley, Toronto, and London.

Flexible Radios and Flexible Networks

Over the past decades the world has become increasingly connected, with communications driving both markets and social movements. Low power electronics, efficient communications, and better battery technology have all contributed to this revolution, but the cost and power required for these systems must be pushed further to make cheap, ubiquitous, seamless communication accessible to a wider community.

In this talk I will discuss two engineering approaches to this problem. I will look at various approaches to drive the power down in radio networks that span across circuits and systems. I will also look at creative biologically inspired approaches to enabling very low power networks and IoT. Finally, I will discuss how by adding flexibility and building reconfigurable hardware, we can likewise build lower power and less costly consumer systems that can adapt across protocols and networks and work under changing device technologies.

Friday, September 28, 2018
Halligan Hall | 1:45pm - 2:45pm