

# University of California-Los Angeles

## Principal Faculty

Abeer Alwan

## Affiliated Faculty

Linguistics: Patricia Keating and Peter Ladefoged

Head and Neck Surgery: Bruce Garrett and Jody Kreiman

Physiological Sciences: Peter Narins

Electrical Engineering: Rick Wesel

## Site Laboratory

Speech Processing and Auditory Perception Laboratory, Department of Electrical Engineering

## Current and Future Research Projects

1. Modeling Human Speech Perception in Noise with Applications to Noise-Robust Speech Coding and Recognition and to Hearing Aids
2. Models of Speech Production based on MRI, Acoustic, and Aerodynamic Data: Implications for Articulatory-Based Synthesis and Coding
3. Computer Synthesis of Different Voice Qualities: A Parametric Approach

## Research Philosophy

My work on modeling speech production and perception reflects the philosophy that the most effective path to improved speech and auditory applications is to derive and apply computational models that reproduce human performance.

To date, using original experiments, we have derived functional models which have improved automatic speech recognition and coding systems performance in noise and speech synthesis of normal and disordered speech.

## Current, Past and Anticipated Sources of Research Funding

NSF, NIH, DARPA and AT&T

## Current and Past Research Collaborations

UCLA: Other EE and CS faculty, Linguists, Head and Neck Surgeons and Speech Scientists. Speech and Hearing Scientists at the House Ear Institute, a radiologist at Cedars Sinai Medical Center

EE faculty at USC, Caltech, and U. Illinois-Urbana, and a researcher at AT&T.

## Student training

Students are trained in a variety of speech-processing areas: speech communication (production and perception), synthesis, recognition, and coding. Currently, 5 MS students and 5 PhD students are working in SPAPL. Summer internships at other sites and companies are strongly encouraged.

The following students and post-doc have graduated from the lab:

A. Shen (Intel); S. Narayanan (AT&T); B. Strobe (Nuance); Y. Song (Conexant); W. Bayever (Xerox); P. Bangayan (Rockwell Science Center); V. Petsalis (Conexant); L. Falkson (Sun); J. Lo (NEC); A. Rane (Intel); M. Siqueira (Philips); S. Chen (Rockwell Science Center); H. Chi (Sony); M. Hasegawa-Johnson (Univ. Illinois, Urbana-Champaign).

## Further Information

<http://www.icsl.ucla.edu/~spapl/>