

**Robert Adams**  
Technical Fellow  
Analog Devices



Robert Whitlock Adams is a Technical Fellow at Analog Devices, Inc. (ADI) in Wilmington, Massachusetts. His focus is on signal processing and analog-to-digital conversion for professional audio. He is a leader in the development of sigma-delta converters, introducing architectural advances including mismatch shaping, multi-bit quantization, and continuous-time architectures.

Adams graduated with a Bachelor of Science in Electrical Engineering from Tufts University in 1976.

From 1977 to 1988 he worked for DBX, a professional audio recording company. There, he helped develop the industry's first audio converter with greater than 16-bit resolution, as well as one of the earliest digital audio recorders.<sup>[3]</sup> In 1988, he joined the Converter Group of Analog Devices as a Senior Staff Designer, and went on to develop ADI's first sigma-delta converters in partnership with Paul Ferguson. He produced the world's first monolithic asynchronous sample rate converters (the AD1890 family), and he created ADI's sigmaDSP line of audio-specific digital signal processing cores.

As of 1998, Adams had received 15 patents related to audio signal processing.

- Elected Fellow of the Audio Engineering Society (AES), 1991
- Received AES Silver Medal Award, 1995
- Included in *Electronic Design* magazine's Engineering Hall of Fame, 2011
- Became a Fellow of the Institute of Electrical and Electronics Engineers (IEEE), 2012 "for contributions to analog and digital signal processing"<sup>[8][9]</sup>
- Received the IEEE Donald O. Pederson Award, 2015 "for contributions to noise-shaping data converter circuits, digital signal processing, and log-domain analog filters"

## Acoustic Noise Cancellation, theory and practice

The use of Acoustic Noise Cancellation to reduce audible and distracting noises is growing rapidly. While the fundamental technical principles are quite old, there have been several new developments including low-latency all-digital signal-paths and multi-microphone architectures. A somewhat new challenge has emerged in the field of automotive noise cancellation, where heavy sound-dampening materials are being removed to increase fuel efficiency, resulting in a need for engine and road-noise cancellation using the existing audio playback system.

This talk will cover both the theoretical and practical challenges, and discuss how they might be solved using real-world components.

Friday, September 21, 2018  
Halligan Hall | 1:45pm - 2:45pm