

**CURRICULUM VITAE**  
**JAMES M. HILLENBRAND**

**Present Position**

Professor  
Department of Speech Pathology and Audiology  
Western Michigan University  
Kalamazoo, Michigan 49008  
1988 - present

**Professional Employment**

Director of Research  
Intelligent Systems Division  
RIT Research Corporation, Rochester, N.Y  
(Concurrent adjunct appointment in Graduate Computer  
Science Department, Rochester Institute of Technology )  
1985–1988

Assistant/Associate Professor  
Department of Communication Sciences and Disorders  
Northwestern University, Evanston, Illinois  
1980-1985

**Education**

B.S. Speech & Hearing Science, Indiana University, 1974 (cum laude)  
M.S. Speech & Hearing Science, Indiana University, 1975 (Thesis advisor: David B. Pisoni)  
Ph.D. Speech & Hearing Science, University of Washington, 1980 (Thesis advisor: Patricia K. Kuhl)

**Academic Honors**

Fellow, Acoustical Society of America, 2000  
Distinguished Faculty Scholar Award, Western Michigan University, 1999  
Editor's Award, *Journal of Speech and Hearing Research*, 1994  
Northwestern University Teaching Excellence Award, 1983  
University of Washington Annual Fund Doctoral Fellowship, 1979  
Indiana University Honors Division Undergraduate Research Award, 1974

**Research Grants and Consulting**

Acoustic correlates of phonetic quality. National Institutes of Health [NIDCD R01 DC 01661],  
1992-1996 (\$1,058,500), 1996-2001 (\$2,184,043), 2002-2006 (\$2,216,772). (Principal  
Investigator)

Multidimensional analysis of abnormal vocal quality. National Institutes of Health [NINCDS 7-R01-NS-23703], 1985-1989 (\$511,200). (Principal Investigator)

Development of a large-vocabulary, speaker-independent, continuous speech automatic speech recognition system. Rome Air Development Center and the Air Force Office of Scientific Research as part of the Northeast Artificial Intelligence Consortium [F30602-85-C-000], \$510,000. (Co-Investigator 1986-1988, Consultant 1988-1989)

Performance evaluation of large-vocabulary, continuous speech recognition technology. Eastman Kodak Advanced Computing Laboratory, \$14,500, 1988. (Principal Investigator)

Development of a speech-analysis/synthesis workstation for the Texas Instruments Explorer/Odyssey Digital Signal-Processing Board. Texas Instruments and Rome Air Development Center, \$5000, 1987-1988. (Co-Investigator)

A signal processing workstation with a visual programming interface. Apple Computers Speech Recognition Group, \$35,000, 1990. (Principal Investigator)

Perceptual segmentation of speech by infants. National Institutes of Health, 1987-1989. (Consultant)

High-speed film and aerodynamic study of breathy vocal quality. National Technical Institute for the Deaf, 1990-1993. (Consultant)

Quantification of intelligibility in deaf speech. National Technical Institute for the Deaf, 1990-1993. (Consultant)

Tracheoesophageal voice in four prosthetic/occlusion conditions. Bay Pines Veteran's Administration Medical Center, 1988-1992. (Consultant)

### **Professional Service**

Associate Editor: *Journal of the Acoustical Society of America*, 1998-1999  
*JASA Express Letters*, 1998-present  
*Journal of Speech and Hearing Research*, 1991-1994.

Acting Assoc. Editor: *Journal of Speech and Hearing Research*, Summer, 1998

Editorial Consultant: *Journal of the Acoustical Society of America*, *Journal of Experimental Psychology: Human Perception and Performance*, *Perception & Psychophysics*, *Journal of Speech and Hearing Research*, *Journal of Phonetics*, *Science*, *Speech Communication*, *Folia Phoniatrica*, *Language and Speech*, *Phonetica*, *Word*, *Journal of Voice*

### Research Grant Review Panels

National Institutes of Health NIDCD R21 (2002)  
 National Institutes of Health Sensory Disorders & Language Study Section (1993-98; co-chair, 1998)  
 National Institutes of Health AHR-B1 Study Section (1989-90)  
 National Institutes of Health Small Grant Review Panel (1993-94)  
 National Science Foundation, Ad Hoc Reviewer (1994)

Acoustical Society of America Speech Communication Technical Committee (1997-present)

### **Patent Disclosure**

A damped sine wave vocoder. (with R.A. Houde and R.T. Gayvert)

### **Text Book (In Preparation)**

Hillenbrand, J.M. *Fundamentals of Hearing Science*

### **Articles**

Hillenbrand, J.M., and Clark, M.J. (2008). The Role of  $F_0$  and formant frequencies in distinguishing the voices of men and women. *Under review*.

Clark, M.J., and Hillenbrand, J.M. (2008). Quality of American English back vowels before /r/. *Journal of the International Phonetic Association*, in press.

Hillenbrand, J.M., Houde, R.A., and Gayvert, R.A. (2006). "Speech perception based on spectral peaks versus spectral shape," *Journal of the Acoustical Society of America*, 119, 4041-4054.

Hillenbrand, J.M., and Gayvert, R.A. (2005). "Open source software for experiment design and control," *Journal of Speech, Language, and Hearing Research*, 48, 45-60.

Hillenbrand, J.M. (2003). "American English: Southern Michigan," *Journal of the International Phonetic Association*, 33, 121-126.

Hillenbrand, J.M., and Houde, R.A. (2003). "A narrow band pattern-matching model of vowel perception," *Journal of the Acoustical Society of America*, 113, 1044-1055.

Clark, M.J., and Hillenbrand, J.M. (2003). "Quality of front vowels before /r/," *Journal of the International Phonetic Association*, 33, 1-16.

Kardach, J., Wincowski, R., Metz, D.E., Schiavetti, N., Whitehead, R.L., and Hillenbrand, J. (2002). "Preservation of place and manner cues during simultaneous communication: A spectral moments perspective," *Journal of Communication Disorders*, 35, 533-542.

Hillenbrand, J.M., and Houde, R.A. (2002). "Speech synthesis using damped sinusoids," *Journal of Speech, Language, and Hearing Research*, 45, 639-650.

Heman-Ackah, Y.D., Heuer, R.J., Michael, D.D., Ostrowski, R., Horman, M., Baroody, M., Hillenbrand, J.M., and Sataloff, R.T. (2003). "Cepstral peak prominence: A more reliable measure of dysphonia," *Annals of Otology, Rhinology, and Laryngology*, 112, 324-333.

Hillenbrand, J.M., Clark, M.J., and Nearey, T.M. (2000). "Effects of consonant environment on vowel formant patterns," *Journal of the Acoustical Society of America*, 109, 748-763.

- Hillenbrand, J.M., Clark, M.J., and Houde, R.A. (2000). "Some effects of duration on vowel recognition," *Journal of the Acoustical Society of America*, 108, 3013-3022.
- Hillenbrand, J.M., and Nearey, T.M. (1999). "Identification of resynthesized /hVd/ syllables: Effects of formant contour," *Journal of the Acoustical Society of America*, 105, 3509-3523.
- Hillenbrand, J.M. (in press). Acoustic analysis of voice. In D. Mattox (Ed.) *Diagnostic Tests in Otolaryngology*.
- Hillenbrand, J.M., and Houde, R.A. (1997). "Comments on finite impulse response filters," *Journal of Speech and Hearing Research*, 40, 408-409.
- Hillenbrand, J.M., and Houde, R.A. (1996). "The role of  $F_0$  and amplitude in the perception of intervocalic glottal stops," *Journal of Speech and Hearing Research*, 39, 1182-1190.
- Hillenbrand, J.M., and Houde, R.A. (1996). "Creating filters with arbitrary response characteristics for use in hearing and speech research," *Journal of Speech and Hearing Research*, 39, 390-395.
- Hillenbrand, J.M., and Houde, R.A. (1996). "Acoustic characteristics of breathy vocal quality: Dysphonic voices and continuous speech," *Journal of Speech and Hearing Research*, 39, 311-321.
- Hillenbrand, J.M., Getty, L.A., Clark, M.J., and Wheeler, K. (1995). "Acoustic characteristics of American English vowels," *Journal of the Acoustical Society of America*, 97, 3099-3111.
- Hillenbrand, J.M., Cleveland, R.A., and Erickson, R.L. (1994). "Acoustic correlates of breathy vocal quality," *Journal of Speech and Hearing Research*, 37, 769-778.
- Hillenbrand, J.M., and Gayvert, R.T. (1993). "Vowel classification based on fundamental frequency and formant frequencies," *Journal of Speech and Hearing Research*, 36, 694-700.
- Hillenbrand, J.M., and Gayvert, R.T. (1993). "Identification of steady-state vowels synthesized from the Peterson and Barney measurements," *Journal of the Acoustical Society of America*, 94, 668-674.
- Kempster, G.B., Kistler, D.J., and Hillenbrand, J.M. (1991). "Multidimensional analysis of dysphonia in two speaker groups," *Journal of Speech and Hearing Research*, 34, 534-543.
- Hillenbrand, J.M. Acoustics and voice disorders. (1991). *WMU Journal of Speech, Language and Hearing*, 25, 5-6.
- Hillenbrand, J.M. and Flege, J.E. (1990). "Application of acoustic techniques to the assessment of speech disorders," In J. Cooper (Ed.), *Assessment of Speech and Voice Production: Research and Clinical Application*, Bethesda, MD: NIDCD Monograph, 53-62.

- Hillenbrand, J.M., Canter, G.J., and Smith, B.L. (1990). "Perception of intraphonemic differences by phoneticians, musicians, and inexperienced listeners," *Journal of the Acoustical Society of America*, 88, 655-662.
- Hillenbrand, J.M. (1988). "Perception of aperiodicities in synthetically generated voices," *Journal of the Acoustical Society of America*, 83, 2361-2371.
- Hillenbrand, J.M. and Ziegler, D.V. (1988). "A benchmark test for the measurement of phonetic recognition accuracy by continuous speech automatic speech recognition systems," Technical Report 88-24, Eastman Kodak Advanced Computing Laboratory, Rochester, New York.
- Rhody, H.E., Hillenbrand, J.M., and Biles, J.A. (1988). "Artificial intelligence applications to speech understanding," 1988 Annual Report, Northeast Artificial Intelligence Consortium, Rome Air Development Center and Air Force Office of Scientific Research, Contract F30602-85-C0008.
- Hillenbrand, J.M. (1987). "A methodological study of perturbation and additive noise in synthetically generated voice signals," *Journal of Speech and Hearing Research*, 30, 448-461.
- Flege, J.E. and Hillenbrand, J.M. (1987). "A differential effect of release bursts on the stop voicing judgments of native French and English listeners," *Journal of Phonetics*, 15, 68-73.
- Rhody, H.E., Hillenbrand, J.M., and Biles, J.A. (1987). "Artificial intelligence applications to speech understanding," 1987 Annual Report, Northeast Artificial Intelligence Consortium, Rome Air Development Center and Air Force Office of Scientific Research, Contract F30602-85-C0008.
- Wilde, M.D., Martens, W.L., Hillenbrand, J.M., and Jones, D. (1986). "Externalization mediates changes in the perceived roughness of voice signals with jittered fundamental frequencies," *Proceedings of the 1986 International Computer Music Conference*, The Hague.
- Halpern, L., Blake, R., and Hillenbrand, J.M. (1986). "The psychoacoustics of a chilling sound," *Perception and Psychophysics*, 39, 77-80.
- Flege, J.E. and Hillenbrand, J.M. (1986). "Perception of the English [s-z] contrast by American, French, Swedish and Finnish listeners," *Journal of the Acoustical Society of America*, 79, 508-517.
- Smith, B.L., Hillenbrand, J.M., and Ingrisano, D.R-S. (1986). "Comparison of temporal measures of speech using spectrograms and digital oscillograms," *Journal of Speech and Hearing Research*, 29, 270-274.

- Smith, B.L. and Hillenbrand, J.M. (1986). "Durational characteristics of vocal and subvocal speech: Implications concerning phonological organization and articulatory difficulty," *Journal of Phonetics*, 14, 265-281.
- Robbins, J., Fisher, H.B., Logemann, J., Hillenbrand, J.M., and Blom, E. (1984). "Selected acoustic features of tracheo-esophageal, esophageal and laryngeal speech," *Archives of Otolaryngology*, 110, 670-672.
- Hillenbrand, J.M. (1985). "Perception of feature similarities by infants," *Journal of Speech and Hearing Research*, 28, 317-318 (L).
- Hillenbrand, J.M. (1984). "Speech perception by infants: Categorization based on nasal consonant place of articulation," *Journal of the Acoustical Society of America*, 75, 1613-1622.
- Hillenbrand, J.M. (1984). "Perception of sine-wave analogs of voice onset time stimuli," *Journal of the Acoustical Society of America*, 75, 231-240.
- Hillenbrand, J.M., Ingrisano, D.R-S., Smith, B.L., and Flege, J.E. (1984). "Perception of the voiced-voiceless contrast in syllable-final stops," *Journal of the Acoustical Society of America*, 76, 18-26.
- Flege, J.E. and Hillenbrand, J.M. (1984). "Limits on phonetic approximation in foreign language speech production," *Journal of the Acoustical Society of America*, 76, 708-721.
- Hillenbrand, J.M. (1983). "Perceptual organization of speech sounds by infants," *Journal of Speech and Hearing Research*, 26, 268- 282.
- Hillenbrand, J.M., Minifie, F.D., and Edwards, T.J. (1979). "Tempo of spectrum change as a cue in speech-sound discrimination by infants," *Journal of Speech and Hearing Research*, 22, 148-165.
- Hillenbrand, J.M. (1975). "Intensity and repetition effects on selective adaptation to speech," In D.B Pisoni (Ed.) *Research on Speech Perception*, 2, 59-137.

### **Conference Presentations**

Houde, R.A., and Hillenbrand, J.M. (2008). Bernoulli coding on the auditory nerve and its implications for central auditory processing. Joint meeting of the Acoustical Society of America and the European Acoustics Association, Paris, July 2008. (Abstract: *Journal of the Acoustical Society of America*, 123, 3715).

Hillenbrand, J.M., and Clark, M.J. (2008). Perception of sinewave vowels. Joint meeting of the Acoustical Society of America and the European Acoustics Association, Paris, July 2008. (Abstract: *Journal of the Acoustical Society of America*, 123, 3326).

Houde, R.A., and Hillenbrand, J.M. (2007). Vocal tract normalization for vowel recognition. Acoustical Society of America, Salt Lake City, UT.

Hillenbrand, J.M., and Houde, R.A. (2006). On distinctions between stops and similar-place weak fricatives. Joint meeting of the Acoustical Society of America and the Acoustical Society of Japan, December, Honolulu, HI.

Clark, M.J., and Hillenbrand, J.M. (2005). Quality of American English back vowels before /r/. Acoustical Society of America, Spring, Vancouver, CA.

Hillenbrand, J.M. (2004). Effects of spectral tilt on the perception of naturally spoken vowels. Society of America, Spring, San Diego CA.

Hillenbrand, J.M., and Gayvert, R.T. (2003). Open-source software for speech perception research. Acoustical Society of America, Nashville, TN.

Nearey, T.M., Assmann, P.F., and Hillenbrand, J.M. (2002). Evaluation of a strategy for automatic formant tracking. Pan-American/Iberian Meeting on Acoustics, Cancun, Mexico.

Hillenbrand, J., and Houde, R. (2002). Speech perception based on spectral peaks *versus* spectral shape: Results from two synthesis techniques. Pan-American/Iberian Meeting on Acoustics, Cancun, Mexico.

Clark, M.J., and Hillenbrand, J. (2001). Quality of vowels before /r/. Acoustical Society of America, Chicago, IL.

Heman-Ackah, Y.D., Heuer, R.J., Michael, D.D., Ostrowski, R., Horman, M., Baroody, M., Hillenbrand, J.M., and Sataloff, R.T. (2001). Cepstral peak prominence: A more reliable measure of dysphonia. Laryngological Society of America, Palm Desert, CA.

Hillenbrand, J., and Houde, R.A. (2001). Recognizing vowels from narrow band spectra. Acoustical Society of America, Ft. Lauderdale, FL.

Hillenbrand, J.M., Clark, M.J., and Houde, R.A. (2000). The role of duration on in the perception of vowel quality. Acoustical Society of America, Atlanta, GA.

Nearey, T.M., Kiefte, M., and Hillenbrand, J.M. (1999). Comparing alternate representations of acoustic properties in vowel perception. Acoustical Society of America, Berlin.

Hillenbrand, J.M., Houde, R.A., Clark, M.J., and Nearey, T.M. (1999). Vowel recognition from harmonic spectra. Acoustical Society of America, Berlin.

Hillenbrand, J.M., and Houde, R.A. (1998). A damped sinewave vocoder. Acoustical Society of America, Norfolk, VA.

Hillenbrand, J.M., and Kersten, S.M. (1998). Some factors affecting the reliability of vocal quality judgments. International Association of Logopedics and Phoniatrics, Amsterdam.

Hillenbrand, J.M., and Clark, M.J. (1997). Effects of consonant environment on vowel formant patterns. Acoustical Society of America, San Diego, CA.

Hillenbrand, J.M., and Nearey, T.M. (1996). Effects of formant contour on the perception of synthesized /hVd/ syllables. Acoustical Society of America, Honolulu, HI.

Nearey, T.M., Kiefe, M., and Hillenbrand, J.M. (1996). Logistic regression analysis of the perception of natural and synthesized /hVd/ syllables. Acoustical Society of America, Honolulu, HI.

Hillenbrand, J.M., and Houde, R.A. (1995). Vowel recognition: Formants, spectral peaks, and spectral shape representations. Invited presentation, Acoustical Society of America, St. Louis, MO.

Houde, R.A., and Hillenbrand, J.M. (1995). The relationship of spectral peaks to phonetic quality and intelligibility. Invited presentation, Proceedings of the 1995 Conference on Implantable Auditory Prostheses, Pacific Grove, CA.

Hillenbrand, J.M. (1995). Identification of vowels synthesized from /hVd/ utterances: Effects of formant contour. Acoustical Society of America, Washington, D.C.

Houde, R.A., and Hillenbrand, J.M. (1995). Pitch perception physiology and psychophysics as a basis for the design of pitch detection algorithms. Acoustical Society of America, Washington, D.C..

Hillenbrand, J.M., Murry, T., Titze, I., and Verdolini, K. (1994). Clinical voice measurements: Use, interpretation, and effectiveness. American Speech and Hearing Association, New Orleans, LA.

Hillenbrand, J.M., Getty, L.A., Clark, M.J., and Wheeler, K. (1994). Acoustic characteristics of American English vowels. Acoustical Society of America, Cambridge, MA

Hillenbrand, J.M., and Houde, R.A. (1994). The role of fundamental frequency in the perception of glottal stops. Acoustical Society of America, Cambridge, MA.

Hillenbrand, J.M., Knight, S., Clymer, W., and Metz, D. Research and clinical applications of microcomputers in speech and hearing. New York State Speech, Language, and Hearing Association, Kiamesha Lake, NY.

Hillenbrand, J.M., Metz, D.E., Colton, R.A., and Whitehead, R.L. High-speed film and acoustic analysis of breathy vocal quality. American Speech and Hearing Association, Seattle, WA.

Bamberg, C.M., Hanley, J.M., and Hillenbrand, J.M. Pitch and amplitude perturbation in adult stutterers and nonstutterers. American Speech and Hearing Association, Seattle, WA.

Hillenbrand, J.M., Nero, R., and Ridley, T.R. Effects of aperiodicity on the perception of dysphonia in synthetically generated voices. Michigan State Speech and Hearing Association, Lansing, MI.

Hillenbrand, J.M., Metz, D., Rubin, P., Knight, S., Clymer, W. and Ridley, T. Speech analysis with microcomputers. New York State Speech, Language, and Hearing Association, Kiamesha Lake, New York.

Campanelli, M., Hillenbrand, J.M., and Gayvert, R.T. Phonetic classification in a speaker independent speech recognition environment. Great Lakes Computer Science Conference, Western Michigan University, Kalamazoo, MI.

Hillenbrand, J.M., Nero, R., and Ridley, T.R. Perceptual effects of glottal waveshape and duty cycle perturbation. American Speech and Hearing Association, Syracuse, NY.

Delmege, J.D., Hillenbrand, J.M., and Gayvert, R.T. Effects of tree structure and statistical methods on broad phonetic classification. Acoustical Society of America, Syracuse, NY.

Gayvert, R.T., Biles, J.A., Hillenbrand, J.M., and Rhody, H.E. ESPRIT: A signal processing environment with a visual programming interface. Acoustical Society of America, Syracuse, NY.

Hillenbrand, J.M. and Gayvert, R.T. Effects of fundamental frequency contour on the identification of resynthesized vowels with static formant patterns. Acoustical Society of America, Honolulu, HI.

Gayvert, R.T. and Hillenbrand, J.M. Statistical approaches to formant tracking. Acoustical Society of America, Honolulu, HI.

Gayvert, R.T. and Hillenbrand, J.M. Formant tracking using statistical pattern recognition. Acoustical Society of America, Miami, FL. (Also Northeast Artificial Consortium Technical Report 87-24.)

Hillenbrand, J.M. A methodological study of perturbation and additive noise in synthetically generated voice signals. American Speech and Hearing Association, New Orleans, LA.

Hillenbrand, J.M. and McMahon, B. **(1987)**. The role of static spectral properties in vowel identification. Acoustical Society of America, Miami, November, 1987. (Also Northeast Artificial Consortium Technical Report 87-23.)

Hillenbrand, J.M. and Gayvert, R.T. **(1987)**. Speaker-independent vowel classification based on fundamental frequency and formant frequencies. Acoustical Society of America, Indianapolis, May, 1987.

Hillenbrand, J.M. and Sellman, R.T. **(1987)**. Lexical access from errorful phonetic strings. Minnowbrook Conference on Artificial Intelligence, Blue Mountain Lake, NY,.

Hillenbrand, J.M. (1986). Technical considerations in the measurement of pitch perturbation, amplitude perturbation and additive noise. American Speech and Hearing Association.

Kobara, M., Larson, C., Hillenbrand, J.M. and Preston, J. (1986). Measurement of fundamental frequency perturbation in voice signals: A methodological comparison. American Speech and Hearing Association.

Smith, B.L. and Hillenbrand, J.M. Comparison of temporal measurements made from spectrograms and from digital oscillograms. Acoustical Society of America, Austin, Texas, May, 1985.

Hillenbrand, J.M. Martens, W., and Wilde, M. Synthesis of dysphonic vocal quality. American Speech, Language and Hearing Association, Washington, D.C., November, 1985.

Flege, J.E. and Hillenbrand, J.M. Perception of the English [s-z] contrast by American, French, Swedish and Finnish listeners. Acoustical Society of America, Minneapolis, October, 1984.

Hillenbrand, J.M. Evaluation of a signal averaging technique for the measurement of signal-to-noise ratios in speech. Acoustical Society of America, San Diego, November, 1983.

Hillenbrand, J.M. Temporal and spectral effects on the identification and discrimination of relative onset time: Implications for perception of voicing in initial stops. Association for Research in Otolaryngology, St. Petersburg, January, 1983.

Smith, B.L. and Hillenbrand, J.M. Durational characteristics of vocal and subvocal speech. Acoustical Society of America, San Diego, November, 1983.

Ingrisano, D.R-S., Hillenbrand, J.M., Smith, B.L., and Flege, J.E. A perceptual study of the voicing contrast in word-final stops. Acoustical Society of America, Orlando, November, 1982.

Hillenbrand, J.M., Wasowicz, J., and Jordan, P. Perceptual and motor effects of selective adaptation to speech. American Speech and Hearing Association, Toronto, November, 1982.

Hillenbrand, J.M. Auditory perception experiments with sine-wave analogs to the voice onset time dimension. Acoustical Society of America, Chicago, April, 1982.

Parker, D., Hillenbrand, J.M., and Rutherford, D.R. Auditory and phonetic memory coding skills of reading disabled children. American Speech and Hearing Association, Los Angeles, November, 1981.

Robbins, J., Hillenbrand, J.M., and Blom, E.D. Fundamental frequency and cycle-to-cycle variability in post-laryngectomy voice. American Speech and Hearing Association, Los Angeles, November, 1981.

White, K. and Hillenbrand, J.M. An acoustic study of devoicing in stuttering and non-stuttering adults. American Speech and Hearing Association, Los Angeles, November, 1981.

Hillenbrand, J.M. Categorization of stop and nasal consonants by infants. Acoustical Society of America, Los Angeles, November, 1980.

Kuhl, P.K. and Hillenbrand, J.M. Speech perception by young infants: Perceptual constancy for categories based on pitch contour. Society for Research in Child Development, San Francisco, March, 1979.

Hillenbrand, J.M. Perceptual organization of speech sounds by infants. Boston University Conference on Language Development, September, 1979.

Hillenbrand, J.M., Minifie, F.D., and Edwards, T.J. Tempo of formant-frequency change as a cue in infant speech discrimination. Society for Research in Child Development, New Orleans, April, 1977.

Hillenbrand, J.M. and Pisoni, D.B. Intensity and repetition effects on selective adaptation to speech. American Speech and Hearing Association, Washington, D.C., November, 1975.

### **Invited Colloquium and Workshop Presentations**

Hillenbrand, J.M. Speech synthesis from spectral peaks. China Orient Institute on Noise and Vibration, Beijing, China, August, 1999.

Hillenbrand, J.M. Recognizing speech from narrow band spectra. IBM Speech Research Center, Beijing, China, August, 1999.

Hillenbrand, J.M. (1991). Clinical applications of computer voice analysis. New York State Speech, Language, and Hearing Association, Kiamesha Lake, April, 1991.

Hillenbrand, J.M. Speech recognition by man and by machine. Western Michigan University Electrical Engineering Department Colloquium Series, Fall 1991.

Hillenbrand, J.M. Vocal-tract acoustics. New York State Speech, Language, and Hearing Association, Buffalo, New York, April, 1988.

Hillenbrand, J.M. Symposium on speech processing (panelist). Society for Computers in Psychology, Chicago, November, 1988.

Hillenbrand, J.M. Speech perception in early infancy. Michigan State Speech, Hearing, and Language Association, September, 1988.

Erickson, R.L. and Hillenbrand, J.M. Voice disorders. Extern Class for Speech Pathologists, Berrien Springs ISD, October, 1988.

Hillenbrand, J.M. Vowel recognition. Haskins Laboratories, New Haven, Connecticut, September, 1987.

Hillenbrand, J.M. Speech understanding by man and machine. Eastman Kodak Advanced Computing Laboratory, Rochester, New York, June, 1987.

Hillenbrand, J.M. Perception of phonetic categories by infants and adults. Department of Psychology, State University of New York at Binghamton, October, 1986.

Hillenbrand, J.M. Effects of listening experience on the perception of phonetic categories. Department of Speech and Hearing Sciences, University of Pittsburgh, November, 1986.

Hillenbrand, J.M. Infant speech perception: Theory and research findings. Wisconsin Speech and Hearing Association, Madison, April, 1981.

Hillenbrand, J.M. Speech perception in early infancy. Department of Speech and Hearing Sciences, Western Washington University, Bellingham, May, 1978.

### **Teaching**

Phonetics	Western Michigan University
Advanced Speech Science	Western Michigan University
Research Methods	Western Michigan University
Instrumentation	Western Michigan University
Hearing Science	Western Michigan University
Quantitative Methods in Speech Path./Aud.	Western Michigan University
Digital Speech Processing	Rochester Institute of Technology
Acoustic Phonetics	Northwestern University
Electronic Instrumentation Theory	Northwestern University
Computer-Aided Laboratory Research	Northwestern University
Introduction to Research Methods	Northwestern University
Seminar on Speech Research	Northwestern University
Phonetics	University of Washington
Introduction to Communication	University of Washington
Speech Science Laboratory	University of Washington