

## **Curriculum Vitae**

Michael F. Dorman

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### **Academic History:**

University of Washington, B.S., Psychology, 1967

Hollins College, M.A., Psychology, 1968

University of Connecticut, Ph. D., Experimental Child and Developmental Psychology, 1971  
(Minor area: Linguistics)

### **Employment:**

Lehman College of the City University of New York; Assistant Professor, Department of Speech and Interdepartmental Program in Linguistics; 1971-1976

The Doctoral Faculty of the City University of New York; Speech and Hearing Science, 1975-1976

Arizona State University; Associate Professor, Department of Speech and Hearing Science, 1976-1982

Arizona State University; Professor, Department of Speech and Hearing Science and Interdisciplinary Program in Linguistics Studies; 1982-present

University of Utah School of Medicine; Adjunct Professor, Department of Surgery, Division of Otolaryngology/Head and Neck Surgery; 1990-present

### **Administrative Experience:**

Arizona State University, Director, Program in Speech and Hearing Science, 1977-1979.

Arizona State University, Chairman, Department of Speech and Hearing Science, 1979-1983.

### **Major Grant Support:**

NIH award (1973-1977) Program Project Award to Haskins Laboratories: Studies on the nature of speech, instrumentation and practical applications.

NIH award (1978-1980): Speech perception by articulation disordered children (\$41,673).

NIH award (1981-1984): Speech perception by hearing-impaired adults (\$144,883).

NIH award (1984-1989): Speech perception by hearing-impaired adults (\$252,000).

NIH award (1989-1992): Auditory function and speech perception with cochlear implants (\$246,246).

NIH award (1993-1998): Auditory function and speech perception with cochlear implants (\$576,350).

NIH award (1999-2004): Auditory function and speech perception with cochlear implants (\$975,232).

NIH award (2004-2009): Central Auditory Development In Hearing-Impaired Infants (\$894,769). Co-investigator with A. Sharma.

### **Honors:**

Fellow of the Acoustical Society of America

Honorary Member British Cochlear Implant Group

### **Publications:**

#### **1970:**

Webster, R.L. and Dorman, M.F. Decreases in stuttering frequency as a function of continuous and contingent forms of auditory masking. Journal of Speech and Hearing Research, 1970, 13, 82-86.

#### **1971:**

Webster, R.L. and Dorman, M.F. Changes in reliance on auditory feedback cues as a function of oral practice. Journal of Speech and Hearing Research, 1971, 14, 307-311.

#### **1974:**

Dorman, M.F. and Hoffman, R. Short-term habituation of the auditory evoked response in infants. Journal of Speech and Hearing Research, 1974, 16, 637-642.

Dorman, M.F. and Geffner, D. Hemispheric specialization for speech perception in six-year-old black and white children from low and middle socioeconomic classes. Cortex, 1974,2, 141-146.

Dorman, M.F. Auditory evoked potential correlates of speech sound discrimination. Perception and Psychophysics, 1974,15, 215-220.

Dorman, M.F. Discrimination of intensity differences on formant transitions in and out of syllable context. Perception and Psychophysics, 1974, 16, 84-86.

**1975:**

Dorman, M.F. and Porter, R.J. Hemispheric specialization for speech perception in stutterers. Cortex, 1975, 2, 181-186.

Raphael, L.J., Dorman, M.F., Freeman, F.J. and Tobin, C. Vowel and nasal duration as cues to voicing in word-final stop consonants: Spectrographic and perceptual studies. Journal of Speech and Hearing Research, 18, 389-401.

Dorman, M.F. Cutting, J. and Raphael, L.J. Perception of temporal order in vowel sequences with and without formant transitions. Journal of Experimental Psychology: Human Perception and Performance, 1975, 3, 121-129.

**1976:**

Geffner, D. and Dorman, M.F. Hemispheric specialization for speech perception in four-year-old children from low and middle socio-economic class backgrounds. Cortex, 1976,7, 71-73.

Cutting, J. and Dorman, M.F. Discrimination of intensity differences carried on formant transitions varying in extent and duration. Perception and Psychophysics, 1976, 20, 101-107.

**1977:**

Dorman, M.F., Kewley-Port, D., Brady, S. and Turvey, M. Vowel recognition: Inferences from studies of forward and backward masking. Quarterly Journal of Experimental Psychology, 1977, 29, 483-497.

Miller, C., Morse, P. and Dorman, M. Memory for burst cues in infant speech discrimination. Quarterly Journal of Experimental Psychology, 1977, 29, 533-545.

Borden, G., Dorman, M.F., Freeman, F. and Raphael, L.J. Delayed auditory feedback and phonation: An electromyographic study. Journal of Phonetics, 1977, 5, 1-8.

Dorman, M.F., Studdert-Kennedy, M. and Raphael, L.J. Stop-consonant recognition: Release bursts and formant transitions as functionally equivalent, context-sensitive cues. Perception and Psychophysics, 1977, 22, 109-122.

**1978:**

Rosenblum, D. and Dorman, M.F. Hemispheric specialization for speech perception in language deficient kindergarden children. Brain and Language, 1978, 6, 378-379.

**1979:**

Dorman, M.F. On the identification of sine-wave analogues of CV syllables. Proceedings of the Ninth International Congress of Phonetic Science, 1979, 2, 453-460.

Dorman, M.F., Liberman, A.M. and Raphael, L.J. Some experiments on the sound of silence in phonetic perception. Journal of the Acoustical Society of America, 1979, 65, 1518-1532.

**1980:**

Dorman, M.F. and Raphael, L.J. The distribution of acoustic cues for stop consonant place of articulation in VCV syllables. Journal of the Acoustical Society of America, 1980, 67, 1333-1335.

Turek, S., Dorman, M. F., Franks, J. and Summerfield, A.Q. The identification of synthetic /bdg/ by hearing-impaired listeners under monotic and dichotic formant presentation. Journal of the Acoustical Society of America, 1980, 67, 1031-1040.

Raphael, L.J., Dorman, M.F. and Liberman, A.M. On defining the vowel duration that cues voicing in final position. Language and Speech, 1980, 23, 297-307.

Raphael, L.J., Dorman, M.F. and Geffner, D. Durational differences of vowels before voiced and voiceless syllable-final consonants in four and five year-old English speaking children. Journal of Phonetics, 1980, 8, 335-341.

Dorman, M.F. and Raphael, L.J. Silence as a cue to the perception of syllable-initial and syllable-final stop consonants. Journal of Phonetics, 1980, 8, 269-275.

Dorman, M.F., Raphael, L.J., and Isenberg, D. Acoustic cues for a fricative-affricate contrast in word-final position. Journal of Phonetics, 1980, 8, 397-405.

**1981:**

Parady, S. Dorman, M.F., Whaley, P. and Raphael, L.J. Identification and discrimination of a synthesized voicing contrast by normal and sensorineural hearing-impaired children. Journal of the Acoustical Society of America, 1981, 69, 783-790.

Dorman, M.F. and Dougherty, K. Shifts in the location of phonetic boundaries with changes in

signal presentation level. Journal of the Acoustical Society of America, 69, 1439-1440.

Summerfield, A.Q., Bailey, P., Seton, J. and Dorman, M.F. Fricative envelope parameters and silent intervals in distinguishing "slit" and "split". Phonetica, 1981, 38, 181-192.

**1982:**

Hannley, M. T. and Dorman, M.F. Some observations on auditory function and stuttering. Journal of Fluency Disorders, 1982, 7, 93-108.

**1983:**

Hannley, M.T. and Dorman, M.F. Susceptibility to spread of masking in listeners with sensorineural hearing impairment. Journal of the Acoustical Society of America, 1983, 74, 40-51.

**1984:**

Johnson, D., Whaley, P. and Dorman, M.F. The processing of cues for stop consonant voicing by young hearing-impaired listeners. Journal of Speech and Hearing Research, 1984, 27, 112-118.

**1985:**

Dorman, M.F., Marton, K., Hannley, M.T. and Lindholm, J.M. Phonetic identification by elderly normal and hearing-impaired listeners. Journal of the Acoustical Society of America, 1985, 77, 664-670.

Dorman, M.F. and Hannley, M.T. (1985) Identification of speech and speech-like signals by hearing-impaired listeners. In Speech Science, R. Danaloff (Ed.), College Hill; San Diego.

Dorman, M.F., Lindholm, J.M. and Hannley, M.T. The influence of the first formant in the recognition of voiced stop consonants by hearing-impaired listeners. Journal of Speech and Hearing Research, 1985, 28, 377-380.

Mann, V.A., Sharlin, H. M., and Dorman, M.F. Children's perception of the relation between articulation and perceptual development. Journal of Experimental Child Psychology, 1985, 39, 252-264.

Raphael, L.J. and Dorman, M.F. The role of formant transitions in the perception of stress in disyllables. In L.J. Raphael (Ed.) Essays in Honor of Arthur Bronstein (Lehman College Press, Bronx, N.Y.).

**1986:**

Dorman, M.F. Temporal resolution, frequency selectivity and the identification of speech by hearing-impaired listeners. The Hearing Journal, 1986, March, 24-26.

Dorman, M.F., Cedar, I., Hannley, M.T., Lindholm, J.M. and Leek, M. The role of the acoustic reflex in maintaining vowel intelligibility at high sound pressure levels. Journal of Speech and Hearing Research, **29**, 420-424.

Leek, M.R., Dorman, M.F. and Summerfield, Q. The role of spectral contrast in the identification of vowels by normal hearing and hearing impaired listeners. Journal of the Acoustical Society of America, **81**, 148-154.

**1987:**

Dorman, M.F., Hannley, M.T., Lindholm, J.M. and Leek, M.R. Vowel intelligibility in the absence of the acoustic reflex: performance-intensity characteristics. Journal of the Acoustical Society of America, **81**, 562-564.

Dubno, J. and Dorman, M.F. Effects of spectral flattening on vowel identification. Journal of the Acoustical Society of America, **82**, 1503-1511.

**1988:**

Lindholm, J.M., Dorman, M. F., Taylor, B. and Hannley, M. Stimulus factors influencing the identification of voiced stop consonants by normal hearing and hearing impaired listeners. Journal of the Acoustical Society of America, **83**, 1608-1614.

Dorman, M.F., Hannley, M., McCandless, G. and Smith, L. Acoustic/phonetic categorization with the Symbion multichannel cochlear implant. Journal of the Acoustical Society of America, **84**, 501-510.

McCandless, G., Dankowski, K. and Dorman, M. F. Results for patients fitted with a multichannel, monopolar, analogue cochlear implant. Hearing Instruments, **39**, 28-30.

**1989:**

Dorman, M. F., Dankowski, K., Smith, L. and McCandless, G. Identification of synthetic vowels by patients using the Symbion multichannel cochlear implant. Ear and Hearing, **10**, 40 - 43.

Dorman, M. F., Dankowski, K., Smith, L. and McCandless, G. Word recognition by 50 patients fitted with the Symbion multichannel cochlear implant. Ear and Hearing, **10**, 44 - 49.

Dorman, M. F., Dankowski, K., McCandless, G. and Smith, L. Consonant recognition as a function of the number of channels of stimulation by patients who use the Symbion cochlear implant. Ear and Hearing, **10**, 288 - 291.

**1990:**

Dorman, M. F. Smith, L, Dankowski, K., and McCandless, G. Pitch scaling and speech understanding by patients who use the Ineraid cochlear implant. Ear and Hearing, **11**, 310-315.

Dorman, M. F., Dankowski, K., McCandless, G. and Smith, L. Longitudinal changes in speech recognition by patients who use the Ineraid cochlear implant. Ear and Hearing, **11**, 455- 459.

Dorman, M. F., Dankowski, K., McCandless, G. and Smith, L. Acoustic cues for consonant identification by patients who use the Ineraid cochlear implant. Journal of the Acoustical Society of America, **88**, 2074-2079.

**1991:**

Dorman, M., Dove, H., Parkin, J., Zacharchuk, S. and Dankowski, K. Telephone use by patients fitted with the Ineraid cochlear implant. Ear and Hearing, **12**, 368-369.

Dorman, M. F., Dankowski, K., McCandless, G. and Smith, L. Vowel and consonant recognition with the aid of a multichannel cochlear implant. Quarterly Journal of Experimental Psychology, **43A**, 585-601.

Dorman, M., Basham, K., Mc Candless, G. and Dove, H. Speech understanding and music appreciation with the Ineraid cochlear implant. The Hearing Journal, June, 34-37.

Leek, M., Brown, M. and Dorman, M. Informational masking and auditory attention. Perception and Psychophysics, **50** (3), 205-214.

**1992:**

Dorman, M., Smith L Dandowski K., McCandless, G. and Parkin J. Long-term measures of electrode impedance and auditory thresholds for the Ineraid cochlear implant. Journal of Speech and Hearing Research, **35**, 1126-1130.

Dorman, M., Smith, M., Smith, L. and Parkin J. 1992 The coding of vowel identity by patients who use the Ineraid cochlear implant. Journal of the Acoustical Society of America, **92**, 3428-3431.

**1993:**

Dorman, M., Smith, L. and Parkin, J. Loudness balance between acoustic and electric stimulation with a multichannel cochlear implant. Ear and Hearing, 14, 290-292.

Dorman, M. Speech recognition by adults. In R. Tyler (Ed.), Audiological foundations of cochlear implants. Singular Press: San Diego.

**1994:**

Dorman, M., Smith, L., Smith, M. and Parkin, J. The pitch of electrically presented sinusoids. Journal of the Acoustical Society of America, 95, 1677-79.

Dorman M. Mechanisms of formant frequency resolution with the Ineraid cochlear implant. In Hochmair-Desoyer I and Hochmair E, Eds. Advances in Cochlear Implants. Mantz: International Interscience Seminars, 302-305.

**1995:**

Dorman, M. Test of the use of amplitude envelope cues to consonant identify by patients who use the Ineraid cochlear implant. Annals of Otology, Rhinology, and Laryngology, Supplement 166, 223-224.

Loizou, P., Dorman, M. and Spanias, A. Automatic recognition of syllable-final nasals preceded by /ε/. Journal of the Acoustical Society of America, 97, 1925-1928.

**1996:**

Dorman, M., Smith, L., Smith, M., and Parkin, J. Frequency discrimination and speech recognition by patients who use the Ineraid and CIS cochlear-implant signal processors. Journal of the Acoustical Society of America, 99, 1174-1185.

Dorman, M. and Loizou, P. Improving consonant intelligibility for Ineraid patients fit with continuous interleaved sampling (CIS) processors by enhancing contrast among channel outputs. Ear and Hearing, 17 (4), 308-313.

Dorman, M. and Loizou, P. Relative spectral change and formant transitions as cues to labial and alveolar place of articulation. Journal of the Acoustical Society of America, 100 (6), 3825-3830.

**1997:**

Dorman, M. F., Loizou, P., and Rainey, D. Speech intelligibility as a function of the number of channels of stimulation for signal processors using sine-wave and noise-band outputs. J. Acoust.

Soc. Am. 102(4), 2403-2411.

Dorman, M. F., and Loizou, P. Changes in speech intelligibility as a function of time and signal processing strategy for an Ineraid patient fitted with continuous interleaved sampling processors. Ear and Hearing, 18, 147-155.

Dorman, M. F., Loizou, P. and Rainey, D. Simulating the effect of cochlear-implant electrode insertion depth on speech understanding. Journal of the Acoustical Society of America, 102(5), 2993-2996.

Dorman, M. F. and Loizou, P. Speech intelligibility as a function of the number of channels of stimulation for normal-hearing listeners and for patients with cochlear implants. American Journal of Otology, 18(6), 113-114.

Dorman, M.F. and Loizou, P. Mechanisms of vowel recognition for Ineraid patients fit with continuous interleaved sampling processors. Journal of the Acoustical Society of America, 102 (1), 581-587.

**1998:**

Loizou, P., Dorman, M. and Powell, V. The recognition of vowels produced by men, women, boys and girls by cochlear implant patients using a six-channel CIS processor. Journal of the Acoustical Society of America, 103(2), 1141-1149.

Dorman, M. F., and Loizou, P. The identification of consonants and vowels by cochlear-implant patients using a 6-channel CIS processor and by normal-hearing subjects using simulations of processors with 2-9 channels. Ear & Hearing, 19(2), 162-166.

Dorman, M., Loizou, P. and Fitzke, J. The identification of speech in noise by cochlear-implant patients and normal-hearing listeners using 6-channel signal processors. Ear and Hearing, 19(6), 481-484.

Sammeth, C., Dorman, M. and Sterns, C. The role of CV ratio and audibility in the intelligibility of voiceless stop consonants by hearing-impaired listeners. Journal of Speech, Language, and Hearing Research, 42, 42-55.

Dorman, M., Loizou, P., Fitzke, J. and Tu, Z. The recognition of sentences in noise by normal-hearing listeners using simulations of cochlear-implant signal processors with 6-20 channels. Journal of the Acoustical Society of America, 104 (6), 3583-3585

Dorman, M. F. *Speech Perception*, in Cochlear Implants, A Handbook. B. Tucker (Ed.) McFarland and Company, pp. 5-28.

Sharma, A. and Dorman, M.F. Exploration of the perceptual magnet effect using the mismatch negativity auditory evoked potential. Journal of the Acoustical Society of America, 104 (1), 511-517.

**1999:**

Loizou, P., Dorman, M. and Tu, Z. On the number of channels needed to understand speech. Journal of the Acoustical Society of America, 106 (4), 2097-2103.

Dorman, M.F. *Speech Perception by Adults*, in Cochlear Implants, S. Waltzman and N. Cohen (Eds.). Thieme Medical Publishers, pp. 317-329.

Sharma, A. and Dorman, M. F. Cortical evoked potential correlates of the phonetic perception of VOT. Journal of the Acoustical Society of America, 106,2, 1078-1083.

**2000:**

Loizou, P., Dorman, M. and Fitzke, J. The Effect of Reduced Dynamic Range on Speech Understanding: Implications for Patients with Cochlear Implants. Ear and Hearing, 21(1), 25-31.

Sharma, A. and Dorman, M.. Neurophysiologic correlates of cross language phonetic perception. Journal of the Acoustical Society of America, 108 (6), 3030-3035.

P. Loizou, M. Dorman, O. Poroy and T. Spahr. Speech recognition by normal-hearing and cochlear implant listeners as a function of intensity resolution. Journal of Acoustical Society of America , 108(5), 2377-2388.

P. Loizou, O. Poroy and M. Dorman. The effect of parametric variations of cochlear implant processors on speech understanding. Journal of Acoustical Society of America , 108(2), 790-802.

Dorman, M., Loizou, P. Fitzke, J. and Tu, Z. The recognition of NU-6 words by cochlear-implant patients and by normal-hearing subjects listening to NU-6 words processed in the manner of CIS and SPEAK strategies. Annals of Otology, Rhinology and Laryngology, 109 (12,2), 64-66.

Loizou, P., Dorman, M., Tu, Z. and Fitzke, J. The recognition of sentences in noise by normal-hearing listeners using simulations of SPEAK-type cochlear-implant signal-processors. Annals of Otology, Rhinology and Laryngology, 109 (12,2), 67-68.

Dorman, M., Loizou, P., Kemp, L. and Kirk, K. Word recognition by children listening to speech processed into a small number of channels: Data from normal-hearing children and children with cochlear implants. Ear and Hearing, 21 (6), 590-596.

Sharma, A., Marsh, C. and Dorman, M. Relationship between N1 evoked potential morphology and the perception of voicing. Journal of Acoustical Society of America, 108 (6), 3030-3035.

Zraick, R., Liss, J., Dorman, M., Case, J., LaPointe, L. and Beals, S. Multidimensional scaling of nasal voice quality. Journal of Speech, Language and Hearing Research, 43 (4), 989-996.

## **2002**

Sharma, A., Dorman, M., Spahr, A. and Todd, N. W. Early cochlear implantation allows for normal development of cortical auditory pathways. Annals of Otology, Rhinology and Laryngology, Vol 111, 5(2), 38-41.

Dorman, M.F., Loizou, P., Spahr, A. and Maloff, E. A comparison of the speech understanding provided by acoustic models of fixed-channel and channel-picking signal processors for cochlear implants. Journal of Speech, Language and Hearing Research, 45 (4), 783-788.

Sharma, A., Dorman, M. F. and Spahr, A. Rapid development of cortical auditory evoked potentials after early cochlear implantation. NeuroReport, 13 (10), 1-4.

Kasturi, K., Loizou, P., Dorman, M.F. and Spahr, T. The intelligibility of speech with 'holes' in the spectrum. Journal of the Acoustical Society of America, 112(3), 1102-1111.

Sharma, A., Dorman, M. F. and Spahr, A. A sensitive period for the development of the central auditory system in children with cochlear implants. Ear and Hearing, 23(6), 532-539.

## **2003:**

Dorman, M. F., and Ketten, D. (2003). Adaptation by a cochlear-implant patient to upward shifts in the frequency representation of speech. Ear and Hearing, 24, 457-460.

Dorman, M. F., Loizou, P. C., Spahr, A. J., and Maloff, E. (2002). Factors that allow a high level of speech understanding by patients fit with cochlear implants. American Journal of Audiology, 11, 119-123.

Loizou, P., Mani, A. and Dorman, M. F. Dichotic speech recognition in noise using reduced spectral cues. Journal of the Acoustical Society of America, 114 (1), 475-483.

Qian, H., P.C. Loizou and Dorman, M. A phone-assistive device based on Bluetooth technology for cochlear implant users. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 11(3), 282-288.

## **2004:**

Dorman, M. F. and Dahlstrom, L. Speech understanding in cochlear-implant patients with different left- and right-ear electrode arrays. Ear and Hearing, 25(2), 191-194.

Sharma, A., Tobey, E., Dorman, M., Bharadwaj, S., Martin, K., Gilley, P., Kunkei, F.

Central auditory maturation and babbling development in infants with cochlear implants. *Archives of Otolaryngology – Head and Neck Surgery*. 130 (5), 511-517.

Spahr, A. and Dorman M. Performance of patients fit with Advanced Bionics CII and Nucleus 3G cochlear implant devices. *Archives of Otolaryngology – Head and Neck Surgery*. 130 (5), 624-628.

Dorman, M. F. and Wilson, B. The design and function of cochlear implants. *American Scientist*, 92 (Sept-Oct), 436-445.

**In press:**

Gilley, P., Sharma, A., Dorman, M. and Martin, K. Developmental changes in refractoriness of the cortical auditory-evoked potential. *Electroencephalography*.