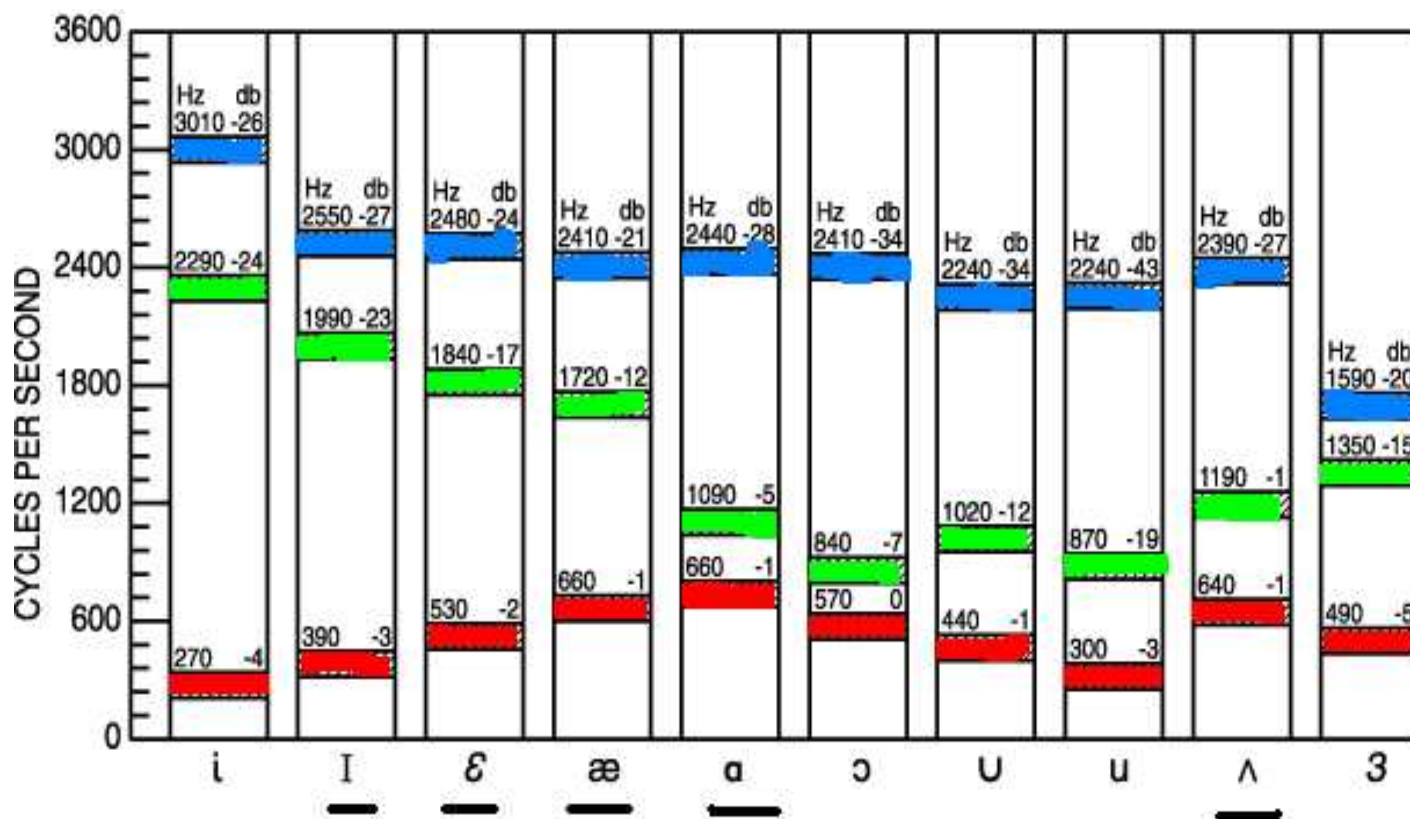




# **Vowel formants and the vowel quadrangle**



# Vowel Formants



Mean F1, F2, F3 for 33 male speakers, for English vowels in a CVC context. Relative formant amplitudes are given in dB with respect to first formant of [ ] (bought). After [Peterson and Barney, reprinted in J. L. Flanagan, Speech Analysis Synthesis and Perception, Springer-Verlag, Berlin, 2nd edition, 1965.



## VOWEL SYMBOL SETS

<b>IPA</b>  International Phonetic Alphabet (Clinical/Linguistics)	<b>AHD</b>  American Heritage Dictionary  (Schools)	<b>SAMPA</b> Speech Assessment Methods Phonetic Alphabet (ASCII Keyboard)	<b>Examples</b>
i		i	<b>beat</b>
ɪ		ɪ	<b>pit</b>
e		e	<b>bait</b>
		ɛ	<b>pet</b>
æ		{	<b>pat</b>
		ʌ	<b>pot</b>
		ʊ	<b>putt</b>
	ô	O	<b>bought</b>
o		o	<b>boat</b>
		U	<b>put</b>
u		u	<b>boot</b>
ɹ	û	ɹ'	<b>bird</b>

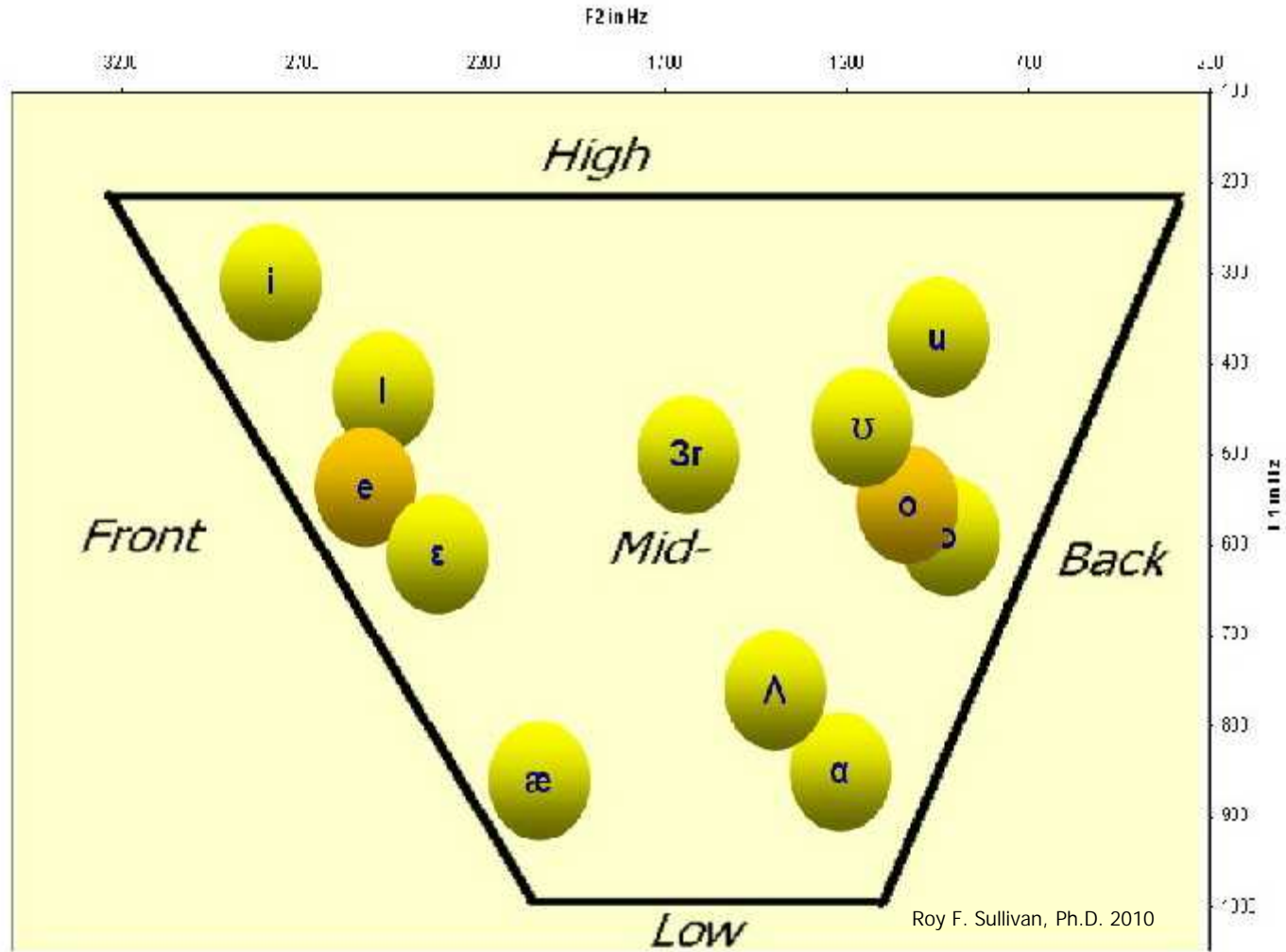
Short vowels



# VOWEL QUADRANGLE: IPA

(International Phonetic Alphabet)

After Peterson & Barney, 1952 N=26F, Gen. Amer.

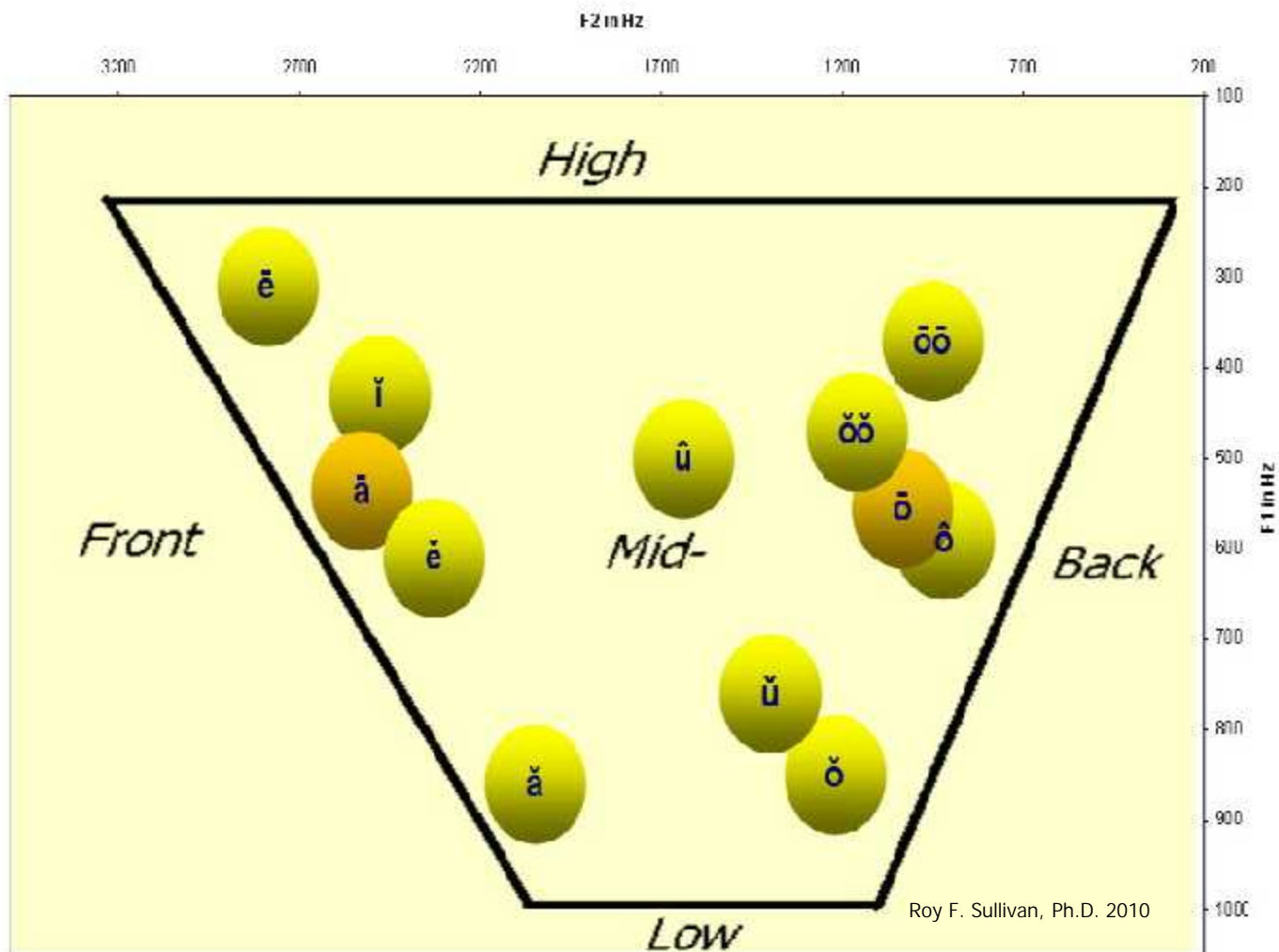




# VOWEL QUADRANGLE: AHD

(American Heritage Dictionary)

After Peterson & Barney, 1952 N=26F, Gen. Amer.



Roy F. Sullivan, Ph.D. 2010



# VOWEL QUADRANGLE: SAMPA

(Speech Assessment Methods Phonetic Alphabet)

After Peterson & Barney, 1952 N=26F, Gen. Amer.

