Using the WSU International Phonetic Alphabet

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Preface

This users guide is intended to serve as a help and supplement to the Washington State University International Phonetic Alphabet (WSUIPA) fonts. It is not intended to be a manual on TEX, linguistics, or the correct usage of the characters, accents and diacritics contained within the font. It is assumed that the user is familiar with the version of TEX he or she is using and with the characters contained within the WSUIPA font. Because the uses for a phonetic alphabet font are probably as varied as the many disciplines which use the characters, this guide is intended to merely show some of the most common ways of using the WSUIPA font. Surely each person who implements the font will develop his or her own favorite way of working with and using the font.

The principal source of information regarding the characters and their shapes has come from sources within the linguistic field—most notably, Geoffrey K. Pullum and William A. Ladusaw, whose book, *Phonetic Symbol Guide* was used extensively. The *Phonetic Symbol Guide* not only lists the International Phonetic Alphabet (IPA) characters and diacritics, it also gives an enlarged illustration of each character which shows its baseline, height, depth and x-height. These character illustrations were invaluable in the design of the WSUIPA METAFONT characters.

Several other people involved in the wonderful world of linguistics also aided in the design of the WSUIPA font. Their input concerning everything from character shape, to placement within the font, to determining which characters should be included, is gratefully acknowledged. I would especially like to thank Karen Mullen, Associate Professor of English, University of Louisville, Louisville, Kentucky. She tested, used the WSUIPA fonts, and took the time to give several suggestions and recommendations that have improved the font. Also, Christina A. Thiele, Managing Director, Journal Production Centre, Carleton University, Ottawa, Ontario, who not only provided a wealth of phonetic information, but also a wealth of encouragement throughout the entire font designing process.

Included with the WSUIPA fonts are:

1. The basic WSUIPA font which contains 128 phonetic characters and/or diacritics in five different point sizes (8, 9, 10, 11 and 12) and in three typefaces (roman, slanted and bold extended).
2. Each size and typeface includes a TFM (TEX Font Metric) file and its related GF, PK or PXL file.
3. A macro package (IPAMACS.TEX) for use with the WSUIPA font, and
4. the *WSUIPA Font User's Guide.*

This guide is divided into three main sections: 1) an introduction to the WSUIPA font, 2) a description of the font layout and the characters included in the font and 3) some TEXniques for use with the WSUIPA fonts.

Although the WSUIPA fonts are written in METAFONT, the user does not need experience with or knowledge of METAFONT to use the font. However, at least a beginning understanding of TEX and the use of fonts in the TEX environment *is* necessary. For information about either TEX or font usage in TEX, see *The TEXbook* by Donald Knuth.

Introduction to the WSUIPA Font

The WSUIPA fonts are written in METAFONT and use the same font parameter values as their Computer Modern (CM) counterparts (cmr and cmbx). In fact, while designing the character shapes, the computer modern code was left intact or modified only slightly whenever possible. Therefore, the WSUIPA fonts are totally compatible with computer modern fonts—the design and shape of the characters are computer modern wherever possible. For the characters that are drastically different from any computer modern characters or symbols, such as the "Gamma," "Baby Gamma" and the "Esh," Pullum and Ladusaw's *Phonetic Symbol Guide* was used as the character design standard.

The WSUIPA fonts are obviously not an exhaustive collection of phonetic or even recognized International Phonetic Alphabet characters. The characters included in the WSUIPA font were chosen either because they were listed as a "major" entry in Pullum and Ladusaw's *Guide*, or because of the recommendations from various people with an interest in the font.

The *Guide* contains what it classifies as "major" and "minor" characters, based upon whether the symbol is an officially recognized IPA character or is determined by Pullum and Ladusaw to be a standard symbol in current American transcriptual practice. The *Guide* lists 78 "major" entries which are not easily attainable in the CM fonts. All 78 of these characters are included in the WSUIPA font, along with 50 "minor" entries from the *Guide*. The selection of which "minor" entries to include was based on information and requests from various phoneticians and linguists who contacted WSU during the beginning stages of the creation of the font.

The Layout of the WSUIPA Font

The character-grouping pattern followed by Pullum and Ladusaw in their *Guide* was adopted as the basis for the WSUIPA font layout. The characters are grouped together according to shape rather than usage. Therefore, the "a" shapes occupy the first positions: '00 through '04, "b" shapes are in positions '05 through '11 and so forth. The accents and diacritics follow the character shapes and are in the last positions in the font. This approach was taken because under it was assumed that under most circumstances, the user would most likely be accessing the characters with the use of macros rather than by typing large portions of entirely phonetic text. Aside from keeping like shapes together, the positioning of the WSUIPA font was fairly arbitrary.

Character Description

Within this section each of the WSUIPA characters are shown in a METAFONT "smoke mode" proof. The octal character position is indicated, along with the corresponding macro name in IPAMACS, and the name of the character given in P&L. Only the roman characters will be illustrated since the shapes of the slanted and bold extended are the same.

There are several Greek characters included in the WSUIPA font, and initially it may appear these are merely copies of the corresponding CM Greek characters. That is true with one very important distinction: the WSUIPA Greek characters included are not italic. All the lowercase Greek characters included in the CM fonts are italic which makes them unsuitable for some situations in phonetics where a non-italic Greek character is essential.

WSUIPA Char' Position: '00
IPAMACS Name: `\inva`
Pullum & Ladusaw name: turned a
IPA Character: ɐ

WSUIPA Char' Position: '01
IPAMACS Name: `\scripta`
Pullum & Ladusaw name: script a
IPA Character: ɑ

WSUIPA Char' Position: '02
IPAMACS Name: `\nialpha`
Pullum & Ladusaw name: lowercase non-italic alpha
IPA Character: α

WSUIPA Char' Position: '03
IPAMACS Name: `\invscripta`
Pullum & Ladusaw name: turned script a
IPA Character: ɒ

WSUIPA Char' Position: '04
IPAMACS Name: `\invv`
Pullum & Ladusaw name: inverted v
IPA Character: ʌ

WSUIPA Char' Position: '05
IPAMACS Name: `\crossb`
Pullum & Ladusaw name: crossed b
IPA Character: ƀ

WSUIPA Char' Position: '06
IPAMACS Name: `\barb`
Pullum & Ladusaw name: barred b
IPA Character: b̵

WSUIPA Char' Position: '07
IPAMACS Name: `\slashb`
Pullum & Ladusaw name: slashed b
IPA Character: b̸

WSUIPA Char' Position: '10
IPAMACS Name: `\hookb`
Pullum & Ladusaw name: hooktop b
IPA Character: ɓ

WSUIPA Char' Position: '11
IPAMACS Name: `\nibeta`
Pullum & Ladusaw name: non-italic lowercase beta
IPA Character: β

WSUIPA Char' Position: '12
IPAMACS Name: `\slashc`
Pullum & Ladusaw name: slashed c
IPA Character: c̸

WSUIPA Char' Position: '13
IPAMACS Name: `\curlyc`
Pullum & Ladusaw name: curly-tail c
IPA Character: ɕ

WSUIPA Char' Position: '14
IPAMACS Name: `\clickc`
Pullum & Ladusaw name: stretched c
IPA Character: ʗ

WSUIPA Char' Position: '15
IPAMACS Name: `\crossd`
Pullum & Ladusaw name: crossed d
IPA Character: đ

WSUIPA Char' Position: '16
IPAMACS Name: `\bard`
Pullum & Ladusaw name: barred d
IPA Character: d̵

WSUIPA Char' Position: '17
IPAMACS Name: `\slashd`
Pullum & Ladusaw name: slashed d
IPA Character: d̸

WSUIPA Char' Position: '20
IPAMACS Name: `\hookd`
Pullum & Ladusaw name: hooktop d
IPA Character: ɗ

WSUIPA Char' Position: '21
IPAMACS Name: `\taild`
Pullum & Ladusaw name: right-tail d
IPA Character: ɖ

WSUIPA Char' Position: '22
IPAMACS Name: `\dz`
Pullum & Ladusaw name: d-yogh ligature
IPA Character: ʤ

WSUIPA Char' Position: '23
IPAMACS Name: `\eth`
Pullum & Ladusaw name: eth
IPA Character: ð

WSUIPA Char' Position: '24
IPAMACS Name: `\scd`
Pullum & Ladusaw name: small capital D
IPA Character: ᴅ

WSUIPA Char' Position: '25
IPAMACS Name: `\schwa`
Pullum & Ladusaw name: schwa
IPA Character: ə

WSUIPA Char' Position: '26
IPAMACS Name: `\er`
Pullum & Ladusaw name: right-hook schwa
IPA Character: ɚ

WSUIPA Char' Position: '27
IPAMACS Name: `\reve`
Pullum & Ladusaw name: reversed e
IPA Character: ɘ

WSUIPA Char' Position: '30
IPAMACS Name: `\niepsilon`
Pullum & Ladusaw name: non-italic greek epsilon
IPA Character: ɛ

WSUIPA Char' Position: '31
IPAMACS Name: `\revepsilon`
Pullum & Ladusaw name: reversed non-italic epsilon
IPA Character: ɜ

WSUIPA Char' Position: '32
IPAMACS Name: `\hookrevepsilon`
Pullum & Ladusaw name: right-hook reversed non-italic epsilon
IPA Character: ɝ

WSUIPA Char' Position: '33
IPAMACS Name: `\closedrevepsilon`
Pullum & Ladusaw name: closed reversed non-italic epsilon
IPA Character: ɞ

WSUIPA Char' Position: '34
IPAMACS Name: `\scriptg`
Pullum & Ladusaw name: lowercase variant g
IPA Character: ɡ

WSUIPA Char' Position: '35
IPAMACS Name: `\hookg`
Pullum & Ladusaw name: hooktop g
IPA Character: ɠ

WSUIPA Char' Position: '36
IPAMACS Name: `\scg`
Pullum & Ladusaw name: small capital G
IPA Character: ɢ

WSUIPA Char' Position: '37
IPAMACS Name: `\nigamma`
Pullum & Ladusaw name: non-italic gamma
IPA Character: ɣ

WSUIPA Char' Position:	'40
IPAMACS Name:	`\ipagamma`
Pullum & Ladusaw name:	IPA Gamma
IPA Character:	ɣ

WSUIPA Char' Position:	'41
IPAMACS Name:	`\babygamma`
Pullum & Ladusaw name:	baby gamma
IPA Character:	ɤ

WSUIPA Char' Position:	'42
IPAMACS Name:	`\hv`
Pullum & Ladusaw name:	h-v ligature
IPA Character:	ƕ

WSUIPA Char' Position:	'43
IPAMACS Name:	`\crossh`
Pullum & Ladusaw name:	crossed h
IPA Character:	ħ

WSUIPA Char' Position:	'44
IPAMACS Name:	`\hookg`
Pullum & Ladusaw name:	hooktop g
IPA Character:	ɦ

WSUIPA Char' Position:	'45
IPAMACS Name:	`\hookheng`
Pullum & Ladusaw name:	hooktop heng
IPA Character:	ɧ

WSUIPA Char' Position:	'46
IPAMACS Name:	`\invh`
Pullum & Ladusaw name:	turned h
IPA Character:	ɥ

WSUIPA Char' Position:	'47
IPAMACS Name:	`\bari`
Pullum & Ladusaw name:	barred i
IPA Character:	ɨ

WSUIPA Char' Position: '50
IPAMACS Name: `\dlbari`
Pullum & Ladusaw name: barred dotless i
IPA Character: ɨ

WSUIPA Char' Position: '51
IPAMACS Name: `\niiota`
Pullum & Ladusaw name: non-italic greek iota
IPA Character: ɩ

WSUIPA Char' Position: '52
IPAMACS Name: `\sci`
Pullum & Ladusaw name: small capital I
IPA Character: ɪ

WSUIPA Char' Position: '53
IPAMACS Name: `\barsci`
Pullum & Ladusaw name: barred small capital I
IPA Character: ᵻ

WSUIPA Char' Position: '54
IPAMACS Name: `\invf`
Pullum & Ladusaw name: barred dotless j
IPA Character: ɟ

WSUIPA Char' Position: '55
IPAMACS Name: `\tildel`
Pullum & Ladusaw name: l with tilde
IPA Character: ɫ

WSUIPA Char' Position: '56
IPAMACS Name: `\barl`
Pullum & Ladusaw name: barred l
IPA Character: ƚ

WSUIPA Char' Position: '57
IPAMACS Name: `\latfric`
Pullum & Ladusaw name: belted l
IPA Character: ɬ

WSUIPA Char' Position: '60
IPAMACS Name: `\taill`
Pullum & Ladusaw name: l with right tail
IPA Character: ɭ

WSUIPA Char' Position: '61
IPAMACS Name: `\lz`
Pullum & Ladusaw name: l-yogh ligature
IPA Character: ɮ

WSUIPA Char' Position: '62
IPAMACS Name: `\nilambda`
Pullum & Ladusaw name: non-italic greek lambda
IPA Character: λ

WSUIPA Char' Position: '63
IPAMACS Name: `\crossnilambda`
Pullum & Ladusaw name: crossed lambda
IPA Character: ƛ

WSUIPA Char' Position: '64
IPAMACS Name: `\labdentalnas`
Pullum & Ladusaw name: m with leftward tail at right
IPA Character: ɱ

WSUIPA Char' Position: '65
IPAMACS Name: `\invm`
Pullum & Ladusaw name: turned m
IPA Character: ɯ

WSUIPA Char' Position: '66
IPAMACS Name: `\legm`
Pullum & Ladusaw name: turned m with long right leg
IPA Character: ɰ

WSUIPA Char' Position: '67
IPAMACS Name: `\nj`
Pullum & Ladusaw name: n with leftward hook at left
IPA Character: ɲ

WSUIPA Char' Position: '70
IPAMACS Name: `\eng`
Pullum & Ladusaw name: eng
IPA Character: ŋ

WSUIPA Char' Position: '71
IPAMACS Name: `\tailn`
Pullum & Ladusaw name: n with right tail
IPA Character: ɳ

WSUIPA Char' Position: '72
IPAMACS Name: `\scn`
Pullum & Ladusaw name: small capital N
IPA Character: ɴ

WSUIPA Char' Position: '73
IPAMACS Name: `\clickb`
Pullum & Ladusaw name: bull's eye
IPA Character: ʘ

WSUIPA Char' Position: '74
IPAMACS Name: `\baro`
Pullum & Ladusaw name: barred o
IPA Character: ɵ

WSUIPA Char' Position: '75
IPAMACS Name: `\openo`
Pullum & Ladusaw name: open o
IPA Character: ɔ

WSUIPA Char' Position: '76
IPAMACS Name: `\niomega`
Pullum & Ladusaw name: non-italic lowercase greek omega
IPA Character: ω

WSUIPA Char' Position: '77
IPAMACS Name: `\closedniomega`
Pullum & Ladusaw name: closed omega
IPA Character: ɷ

WSUIPA Char' Position: '100
IPAMACS Name: `\oo`
Pullum & Ladusaw name: double o
IPA Character: ꝏ

WSUIPA Char' Position: '101
IPAMACS Name: `\barp`
Pullum & Ladusaw name: barred p
IPA Character: ᵽ

WSUIPA Char' Position: '102
IPAMACS Name: `\thorn`
Pullum & Ladusaw name: thorn
IPA Character: þ

WSUIPA Char' Position: '103
IPAMACS Name: `\niphi`
Pullum & Ladusaw name: non-italic lowercase greek phi
IPA Character: þ

WSUIPA Char' Position: '104
IPAMACS Name: `\flapr`
Pullum & Ladusaw name: fish hook r
IPA Character: ɾ

WSUIPA Char' Position: '105
IPAMACS Name: `\legr`
Pullum & Ladusaw name: r with long leg
IPA Character: ɼ

WSUIPA Char' Position: '106
IPAMACS Name: `\tailr`
Pullum & Ladusaw name: r with right tail
IPA Character: ɽ

WSUIPA Char' Position: '107
IPAMACS Name: `\invr`
Pullum & Ladusaw name: turned r
IPA Character: ɹ

WSUIPA Char' Position: '110
IPAMACS Name: `\tailinvr`
Pullum & Ladusaw name: turned r with right tail
IPA Character: ɻ

WSUIPA Char' Position: '111
IPAMACS Name: `\invlegr`
Pullum & Ladusaw name: turned long-legged r
IPA Character: ɺ

WSUIPA Char' Position: '112
IPAMACS Name: `\scr`
Pullum & Ladusaw name: small capital R
IPA Character: ʀ

WSUIPA Char' Position: '113
IPAMACS Name: `\invscr`
Pullum & Ladusaw name: inverted small capital R
IPA Character: ʁ

WSUIPA Char' Position: '114
IPAMACS Name: `\tails`
Pullum & Ladusaw name: s with right tail
IPA Character: ʂ

WSUIPA Char' Position: '115
IPAMACS Name: `\esh`
Pullum & Ladusaw name: esh
IPA Character: ʃ

WSUIPA Char' Position: '116
IPAMACS Name: `\curlyesh`
Pullum & Ladusaw name: curly-tail esh
IPA Character: ʆ

WSUIPA Char' Position: '117
IPAMACS Name: `\nisigma`
Pullum & Ladusaw name: non-italic lowercase greek sigma
IPA Character: σ

WSUIPA Char' Position: '120
IPAMACS Name: `\tailt`
Pullum & Ladusaw name: t with right tail
IPA Character: ʈ

WSUIPA Char' Position: '121
IPAMACS Name: `\tesh`
Pullum & Ladusaw name: t-esh ligature
IPA Character: ʧ

WSUIPA Char' Position: '122
IPAMACS Name: `\clickt`
Pullum & Ladusaw name: turned t
IPA Character: ʇ

WSUIPA Char' Position: '123
IPAMACS Name: `\nitheta`
Pullum & Ladusaw name: non-italic lowercase greek theta
IPA Character: θ

WSUIPA Char' Position: '124
IPAMACS Name: `\baru`
Pullum & Ladusaw name: barred u
IPA Character: ʉ

WSUIPA Char' Position: '125
IPAMACS Name: `\slashu`
Pullum & Ladusaw name: slashed u
IPA Character: ᵾ

WSUIPA Char' Position: '126
IPAMACS Name: `\niupsilon`
Pullum & Ladusaw name: non-italic lowercase greek upsilon
IPA Character: ʊ

WSUIPA Char' Position: '127
IPAMACS Name: `\scu`
Pullum & Ladusaw name: small capital U
IPA Character: ᴜ

WSUIPA Char' Position: '130
IPAMACS Name: `\barscu`
Pullum & Ladusaw name: barred small capital U
IPA Character: ᵾ

WSUIPA Char' Position: '131
IPAMACS Name: `\scriptv`
Pullum & Ladusaw name: script v
IPA Character: ʋ

WSUIPA Char' Position: '132
IPAMACS Name: `\invw`
Pullum & Ladusaw name: inverted w
IPA Character: ʍ

WSUIPA Char' Position: '133
IPAMACS Name: `\nichi`
Pullum & Ladusaw name: non-italic lowercase greek chi
IPA Character: χ

WSUIPA Char' Position: '134
IPAMACS Name: `\invy`
Pullum & Ladusaw name: turned y
IPA Character: ʎ

WSUIPA Char' Position: '135
IPAMACS Name: `\scy`
Pullum & Ladusaw name: small capital Y
IPA Character: ʏ

WSUIPA Char' Position: '136
IPAMACS Name: `\curlyz`
Pullum & Ladusaw name: curly-tail z
IPA Character: ʑ

WSUIPA Char' Position: '137
IPAMACS Name: `\tailz`
Pullum & Ladusaw name: z with right tail
IPA Character: ʐ

WSUIPA Char' Position:	'140
IPAMACS Name:	`\yogh`
Pullum & Ladusaw name:	yogh
IPA Character:	ʒ

WSUIPA Char' Position:	'141
IPAMACS Name:	`\curlyyogh`
Pullum & Ladusaw name:	curly-tail yogh
IPA Character:	ʓ

WSUIPA Char' Position:	'142
IPAMACS Name:	`\glotstop`
Pullum & Ladusaw name:	glottal stop
IPA Character:	ʔ

WSUIPA Char' Position:	'143
IPAMACS Name:	`\revglotstop`
Pullum & Ladusaw name:	reversed glottal stop
IPA Character:	ʕ

WSUIPA Char' Position:	'144
IPAMACS Name:	`\invglotstop`
Pullum & Ladusaw name:	inverted glottal stop
IPA Character:	ʖ

WSUIPA Char' Position:	'145
IPAMACS Name:	`\ejective`
Pullum & Ladusaw name:	ejective
IPA Character:	ˀ

WSUIPA Char' Position:	'146
IPAMACS Name:	`\reveject`
Pullum & Ladusaw name:	reversed ejective
IPA Character:	ˤ

WSUIPA Char' Position:	'147
IPAMACS Name:	`\dental#1`
Pullum & Ladusaw name:	subscript bridge
IPA Character:	̪

WSUIPA Char' Position: '150
IPAMACS Name: `\stress`
Pullum & Ladusaw name: vertical stroke (superior)
IPA Character: ˈ

WSUIPA Char' Position: '151
IPAMACS Name: `\secstress`
Pullum & Ladusaw name: vertical stroke (inferior)
IPA Character: ˌ

WSUIPA Char' Position: '152
IPAMACS Name: `\syllabic`
Pullum & Ladusaw name: syllabicity mark
IPA Character: ̩

WSUIPA Char' Position: '153
IPAMACS Name: `\corner`
Pullum & Ladusaw name: corner
IPA Character: ˺

WSUIPA Char' Position: '154
IPAMACS Name: `\upt`
Pullum & Ladusaw name: IPA pointer
IPA Character: ˔

WSUIPA Char' Position: '155
IPAMACS Name: `\downt`
Pullum & Ladusaw name: IPA pointer
IPA Character: ˕

WSUIPA Char' Position: '156
IPAMACS Name: `\leftt`
Pullum & Ladusaw name: IPA pointer
IPA Character: ˧

WSUIPA Char' Position: '157
IPAMACS Name: `\rightt`
Pullum & Ladusaw name: IPA pointer
IPA Character: ˫

WSUIPA Char' Position: '160
IPAMACS Name: `\halflength`
Pullum & Ladusaw name: half-length mark
IPA Character: ˑ

WSUIPA Char' Position: '161
IPAMACS Name: `\length`
Pullum & Ladusaw name: length mark
IPA Character: ː

WSUIPA Char' Position: '162
IPAMACS Name: `\underdots`
Pullum & Ladusaw name: subscript umlaut
IPA Character: ..

WSUIPA Char' Position: '163
IPAMACS Name: `\ain`
Pullum & Ladusaw name: reversed apostrophe
IPA Character: ʿ

WSUIPA Char' Position: '164
IPAMACS Name: `\upp`
Pullum & Ladusaw name: pointer
IPA Character: ^

WSUIPA Char' Position: '165
IPAMACS Name: `\downp`
Pullum & Ladusaw name: pointer
IPA Character: v

WSUIPA Char' Position: '166
IPAMACS Name: `\leftp`
Pullum & Ladusaw name: pointer
IPA Character: <

WSUIPA Char' Position: '167
IPAMACS Name: `\rightp`
Pullum & Ladusaw name: pointer
IPA Character: >

WSUIPA Char' Position: '170
IPAMACS Name: `\overring`
Pullum & Ladusaw name: over-ring
IPA Character: ˚

WSUIPA Char' Position: '171
IPAMACS Name: `\underring`
Pullum & Ladusaw name: under-ring
IPA Character: ̥

WSUIPA Char' Position: '172
IPAMACS Name: `\open`
Pullum & Ladusaw name: subscript left half-ring
IPA Character: ̜

WSUIPA Char' Position: '173
IPAMACS Name: `\midtilde`
Pullum & Ladusaw name: superimposed (mid-) tilde
IPA Character: ~

WSUIPA Char' Position: '174
IPAMACS Name: `\undertilde`
Pullum & Ladusaw name: subscript tilde
IPA Character: ̰

WSUIPA Char' Position: '175
IPAMACS Name: `\underwedge`
Pullum & Ladusaw name: subscript wedge
IPA Character: ̬

WSUIPA Char' Position: '176
IPAMACS Name: `\polishhook`
Pullum & Ladusaw name: polish hook
IPA Character: ̨

WSUIPA Char' Position:	'177
IPAMACS Name:	`\underarch`
Pullum & Ladusaw name:	subscript arch
IPA Character:	̑

Using the IPAMACS Macros

In addition to the necessary font-related files, the WSUIPA font package also includes a file called IPAMACS.TEX. This is a macro file which includes font declarations and definitions for use with the WSUIPA fonts. It also contains macro definitions for accessing each WSUIPA character mnemonically, as well as some macro definitions to simplify using WSUIPA accents and diacritics with Computer Modern characters and vice versa.

Before you can use any of the macros from the IPAMACS file, you must input the `IPAMACS.TEX` file by entering,

```
\input ipamacs
```

at the top of your TEX file. This assumes, of course, that you have installed this file. The IPAMACS file defines a font called \ipa to be the twelve point roman WSUIPA font. The \ipa font is used in all the macro definitions in IPAMACS to access the characters from the WSUIPA font. You may redefine \ipa, say to be ten point roman, by entering

```
\font\ipatenrm=wsuipa10
\def\ipa{\ipatenrm}
```

within your file. From that point on, all the WSUIPA characters accessed by using the IPAMACS macros will be the ten-point roman WSUIPA.

To access individual WSUIPA characters within sentences set in Computer Modern, you need only to enter the \ipa command. For example,

```
A shibilant is a term occasionally found for a fricative
corresponding to
a ‘‘hushing’’ sound, e.g., IPA [\esh] (more technically,
a grooved laminal fricative).
```

which will print as:

A shibilant is a term occasionally found for a fricative corresponding to a “hushing” sound, e.g., IPA [ʃ] (more technically, a grooved laminal fricative).

The IPAMACS character macros are defined so they can be used with the CM characters and accents without the need for delimiting curly braces. By using the IPAMACS definitions, you can use the CM accents with a WSUIPA character in the same way you would accent a CM character. The following input

```
The superscript tilde is a nasalization marker for vowels,
thus [\~\scripta] is a nasalized [\scripta].
```

will print as:

The superscript tilde is a nasalization marker for vowels, thus [ɑ̃] is a nasalized [ɑ].

The WSUIPA accents can be used with CM characters. However, only the WSUIPA "\dental" and "\underarch" have been defined in IPAMACS and both are diacritics which go under a character. To use any other WSUIPA character as an accent either with a CM character or with another WSUIPA character, you can define the WSUIPA accent in the same way that the CM accents are defined. For example, an "over-ring" accent could be defined as,

```
\def\or#1{{\edef\next{\the\font}%
          \ipatwelverm\accent"78\next#1}}
```

and may be used like,

```
The over-ring may be used over letters with descenders as an
alternative to under-ring to indicate devoicing, e.g. [\or g].
```

which will print as:

The over-ring may be used over letters with descenders as an alternative to under-ring to indicate devoicing, e.g. [g̊].

Most of the WSUIPA diacritics are intended to go under characters, like the "under-arch" and "dental" mentioned above. You may define other "under" accents in the same way as these two. For example, an "undercircle" could be defined as,

```
\def\undercirc#1{\oalign{#1\crcr
                 \hidewidth\underring\hidewidth}}
```

With this definition, the input

```
A voiceless trilled r [\undercirc r] in
certain Scottish dialects ...
```

will print as:

A voiceless trilled r [r̥] in certain Scottish dialects . . .

If the spacing or placement of the diacritic is not exactly what you desire with the basic definition given above, you can add kerns where needed. For example, if you want less space between the "undercircle" and the character, you could change the definition to be,

```
\def\undercirc#1{\oalign{#1\crcr
           \hidewidth\raise.1ex\hbox{\underring}\hidewidth}}
```

and this input

```
A voiceless trilled r [\undercirc r] in
certain Scottish dialects ...
```

will print as:

A voiceless trilled r [r̥] in certain Scottish dialects . . .

Your diacritic definitions may be as general or specific as you wish. At one institution which uses the WSUIPA fonts, they prefer the "undercircle" to be placed differently when it falls under an r than any other character. To accomplish this, they use the following definition for \undercirc.

```
\def\undercirc#1{\ifx#1r
      \oalign{#1\crcr\hidewidth\kern.24em\underring
            \hidewidth\crcr}
      \else\oalign{#1\crcr
            \hidewidth\raise.1ex\hbox{\underring}\hidewidth}
                  \fi}
```

With this definition of \undercirc, the following input

```
To illustrate the different placement of the \underring on
an \undercirc s and on an \undercirc r.
```

will print as

To illustrate the different placement of the \underring on an \undercirc s and on an r̥.

IPAMACS also includes a macro called \diatop which provides an alternative way of getting one or more characters, accents, or diacritics over one another. The \diatop macro takes one argument which is delimited by square brackets ([]) rather than curly braces, and has two parts. The first part of the argument is delimited, or separated, from the second part by a vertical bar (|). \diatop puts the first part of the argument over the second.

Using \diatop instead of our previous definition for the "overring," (\or) you could input,

```
The overring may be used over letters with descenders as
an alternative to
under-ring to indicate devoicing, e.g. [\diatop[\overring|g]].
```

and the output would be,

The overring may be used over letters with descenders as an alternative to underring to indicate devoicing, e.g. [g̊].

More than one character can be stacked over another character by using \diatop. For example,

```
For a really special \diatop[{\diatop{\'||\overring]}||n]
```

will print as:

For a really special ń̊

Notice the use of curly braces to group the argument of the first \diatop when more than one \diatop command is used.

It is also possible to get one or more accents over a character and another accent or character under it. Assuming that \undercirc has been defined as described earlier, the following example

```
This is a really, really special
\diatop[\overring||\undercirc{r}]
```

will print as:

This is a really, really special r̥̊

The IPAMACS do not sent up the WSUIPA fonts to be part of a font family definition, which means that any WSUIPA character that is accessed by an IPAMACS macro, will always print out in the same font (wsuipa12, by default), regardless of what size or typeface you may have been using when the IPAMACS macro was called. In other words, whatever font \ipa is defined to be, determines the font IPAMACS will call.

In order to get slanted WSUIPA characters when \it or \sl is being used, or bold WSUIPA characters when \bf is being used, you must include the definition of \ipa as part of your font family definitions.

Without redefining \ipa, the following input,

```
\dots which is the case in the aforementioned
instances, however, {\bf this
does not preclude the other retroflex consonants:
[\nj], [\taill], [\taild], and [\tailr]}.
```

will print as,

...which is the case in the aforementioned instances, however, **this does not preclude the other retroflex consonants:** [ɲ], [ɭ], [ɖ], **and** [ɽ].

Now, with \ipa defined within the twelve-point font family, as illustrated below

```
\font\twelverm=cmr12
```

```
\font\twelvei=cmmi12
\font\twelvesy=cmsy12
\font\twelveex=cmex12
\font\twelveit=cmti12
\font\twelvebf=cmbx12
\font\twelveipa=wsuipa12
\font\twelveslipa=wslipa12
\font\twelvebfipa=wbxipa12

\def\twelvepoint{%
  \textfont0=\twelverm
      \scriptfont0=\sevenrm  \scriptscriptfont0=\sevenrm
  \def\rm{\fam0\twelverm\def\ipa{\twelvermipa}}%
  \textfont1=\twelvei
  \scriptfont1=\sevenrm  \scriptscriptfont1=\sevenrm
  \textfont2=\twelvesy
  \scriptfont2=\sevensy   \scriptscriptfont2=\sevensy
  \textfont3=\twelveex
  \scriptfont3=\twelveex  \scriptscriptfont3=\twelveex
  \textfont\itfam=\twelveit
  \def\it{\fam\itfam\twelveit\def\ipa{\twelveslipa}}%
  \textfont\bffam=\twelvebf
  \def\bf{\fam\bffam\twelvebf\def\ipa{\twelvebfipa}}%
  \rm}%
%
\twelvepoint
%
```

the previous input of

```
\dots which is the case in the aforementioned
instances, however, {\bf this
does not preclude the other retroflex consonants:
[\nj], [\taill], [\taild], and [\tailr]}.
```

will print as,

…which is the case in the aforementioned instances, however, **this does not preclude the other retroflex consonants: [ɲ], [ɭ], [ɖ], and [ɽ]**.

WSUIPA12— ***WSU International Phonetic Alphabet Roman – 12pt***

	´0	´1	´2	´3	´4	´5	´6	´7	
´00x	ɐ	ɑ	α	ɒ	ʌ	ƀ	ƀ	b̸	″0x
´01x	ɓ	β	ȼ	ɕ	ʗ	đ	đ	d̸	
´02x	ɗ	ɖ	ʤ	ð	D	ə	ɚ	ɘ	″1x
´03x	ɛ	ɜ	ɝ	ɞ	ɡ	ɠ	ɢ	ɣ	
´04x	ɣ	ɤ	ɧ	ħ	ɦ	ɦ	ɥ	ɨ	″2x
´05x	ɨ	ɩ	ɪ	ɨ	ɟ	ƚ	ł	ɬ	
´06x	ɭ	ɮ	λ	ƛ	ɱ	ɯ	ɰ	ɲ	″3x
´07x	ŋ	ɳ	ɴ	ʘ	ɵ	ɔ	ω	ɷ	
´10x	∞	ᵽ	þ	ɸ	ɾ	ɼ	ɽ	ɹ	″4x
´11x	ɻ	ɺ	ʀ	ʁ	ʂ	ʃ	ʆ	σ	
´12x	ʈ	ʧ	ɟ	θ	ʉ	ɥ̸	ʊ	U	″5x
´13x	ʉ	ʋ	ʍ	χ	ʎ	ʏ	ʑ	ʐ	
´14x	ʒ	ʓ	ʔ	ʕ	ƽ	ʡ	ʢ	˽	″6x
´15x	ˈ	ˌ	ˌ	˥	⊥	⊤	⊣	⊢	
´16x	ˑ	ː	..	ʿ	˄	˅	˂	˃	″7x
´17x	˚	˳	˓	~	˷	ˬ	˒	ˆ	
	″8	″9	″A	″B	″C	″D	″E	″F	

WSLIPA12—**WSU International Phonetic Alphabet Slanted – 12pt**

	´0	´1	´2	´3	´4	´5	´6	´7	
´00x	ɐ	ɑ	α	ɒ	ʌ	ƀ	ƀ	b̸	″0x
´01x	ɓ	β	ȼ	ɕ	ʗ	đ	đ	d̸	
´02x	ɗ	ɖ	ʤ	ð	D	ə	ɚ	ɘ	″1x
´03x	ɛ	ɜ	ɝ	ɞ	ɡ	ɠ	ɢ	ɣ	
´04x	ɣ	ɤ	ɧ	ħ	ɦ	ɦ	ɥ	ɨ	″2x
´05x	ɨ	ɩ	ɪ	ɨ	ɟ	ƚ	ł	ɬ	
´06x	ɭ	ɮ	λ	ƛ	ɱ	ɯ	ɰ	ɲ	″3x
´07x	ŋ	ɳ	ɴ	ʘ	ɵ	ɔ	ω	ɷ	
´10x	∞	ᵽ	þ	ɸ	ɾ	ɼ	ɽ	ɹ	″4x
´11x	ɻ	ɺ	ʀ	ʁ	ʂ	ʃ	ʆ	σ	
´12x	ʈ	ʧ	ɟ	θ	ʉ	ɥ̸	ʊ	U	″5x
´13x	ʉ	ʋ	ʍ	χ	ʎ	ʏ	ʑ	ʐ	
´14x	ʒ	ʓ	ʔ	ʕ	ƽ	ʡ	ʢ	˽	″6x
´15x	ˈ	ˌ	ˌ	˥	⊥	⊤	⊣	⊢	
´16x	ˑ	ː	..	ʿ	˄	˅	˂	˃	″7x
´17x	˚	˳	˓	~	˷	ˬ	˒	ˆ	
	″8	″9	″A	″B	″C	″D	″E	″F	

WBXIPA12—***WSU International Phonetic Alphabet Bold Extended – 12pt***

	´0	´1	´2	´3	´4	´5	´6	´7	
´00x	ɐ	ɑ	α	ɒ	ʌ	ƀ	ƀ	b̸	″0x
´01x	ɓ	β	ȼ	ɕ	ʗ	đ	d̶	d̸	
´02x	ɗ	ɖ	ʤ	ð	ᴅ	ə	ɚ	ɘ	″1x
´03x	ɛ	ɜ	ɝ	ɞ	ɡ	ɠ	ɢ	ɣ	
´04x	ɣ	ɤ	ƕ	ħ	ɦ	ɧ	ɥ	ɨ	″2x
´05x	ɨ	ɩ	ɪ	ɨ	ʝ	ɫ	ł	ɬ	
´06x	ɭ	ɮ	λ	ƛ	ɱ	ɯ	ɰ	ɲ	″3x
´07x	ŋ	ɳ	ɴ	ʘ	ɵ	ɔ	ω	ɷ	
´10x	ꝏ	ᵽ	þ	ɸ	ɾ	ɼ	ɽ	ɹ	″4x
´11x	ɻ	ɺ	ʀ	ʁ	ʂ	ʃ	ʆ	σ	
´12x	ʈ	ʧ	ɟ	θ	ʉ	ɣ̸	ʊ	ᴜ	″5x
´13x	ᵾ	ʋ	ʍ	χ	ʎ	ʏ	ʑ	ʐ	
´14x	ʒ	ʓ	ʔ	ʕ	ƽ	ˀ	ˤ	̑	″6x
´15x	ˈ	ˌ	ˌ	˥	⊥	⊤	⊣	⊢	
´16x	ˑ	ː	̤	˓	˄	˅	<	>	″7x
´17x	˚	̥	̜	~	̰	̬	̨	̑	
	″8	″9	″A	″B	″C	″D	″E	″F	

WSUIPA9—***WSU International Phonetic Alphabet Roman – 9pt***

	´0	´1	´2	´3	´4	´5	´6	´7	
´00x	ɐ	ɑ	α	ɒ	ʌ	ƀ	ƀ	b̸	″0x
´01x	ɓ	β	ȼ	ɕ	ʗ	đ	d̶	d̸	
´02x	ɗ	ɖ	ʤ	ð	ᴅ	ə	ɚ	ɘ	″1x
´03x	ɛ	ɜ	ɝ	ɞ	ɡ	ɠ	ɢ	ɣ	
´04x	ɣ	ɤ	ƕ	ħ	ɦ	ɧ	ɥ	ɨ	″2x
´05x	ɨ	ɩ	ɪ	ɨ	ʝ	ɫ	ł	ɬ	
´06x	ɭ	ɮ	λ	ƛ	ɱ	ɯ	ɰ	ɲ	″3x
´07x	ŋ	ɳ	ɴ	ʘ	ɵ	ɔ	ω	ɷ	
´10x	ꝏ	ᵽ	þ	ɸ	ɾ	ɼ	ɽ	ɹ	″4x
´11x	ɻ	ɺ	ʀ	ʁ	ʂ	ʃ	ʆ	σ	
´12x	ʈ	ʧ	ɟ	θ	ʉ	ɣ̸	ʊ	ᴜ	″5x
´13x	ᵾ	ʋ	ʍ	χ	ʎ	ʏ	ʑ	ʐ	
´14x	ʒ	ʓ	ʔ	ʕ	ƽ	ˀ	ˤ	̑	″6x
´15x	ˈ	ˌ	ˌ	˥	⊥	⊤	⊣	⊢	
´16x	ˑ	ː	̤	˓	˄	˅	<	>	″7x
´17x	˚	̥	̜	~	̰	̬	̨	̑	
	″8	″9	″A	″B	″C	″D	″E	″F	