## Lecture 1: Definition, Anatomy, Terminology

Phonetics:

* Science of Speech
  + Uses scientific methods to test hypotheses
  + Interested in spoken language only
* Approaches:
  + Articulatory: How sounds are formed in the vocal tract
  + Acoustic: Properties of soundwaves
  + Auditory/Perceptual: Listeners’ perception
  + Psycholinguistics: Plan, execution, making sense of speech

Phonetic research may focus on:

* Segments: individual speech sounds, e.g., vowels, consonants
* Prosody: patterns over larger units of speech (e.g. stress, rhythm, pitch, over syllables, words, utterances)

Segments: Phonetics vs. Phonology:

* Phonology (phonemes): categories with contrastive meanings (e.g. in English, lead /li:d/ =/= read /ri:d/)
* Phonetics (allophones): members of a category that do not change the meaning (read [= read

Accents:

* Accent = System of pronunciation (spoken version of dialect)
* Everyone has an accent
* Can be large-scale (British/American)
* Smaller scale (Glasgow, West End)
* Idiolect (individual)

Phonetic tools

* Instrumental
  + Audio recordings (analytical in Praat)
  + Articulatory equipment (MRI, EPG)
  + Listening experiments
* Impressionistic
  + Senses (listening, repeating, feeling)
  + International Phonetic Alphabet (IPA)
  + Anatomical knowledge of the vocal tract

Vocal tract:

* Articulators: organs in the vocal tract used to produce speech
  + Mobile (active) or stationary (passive)
  + Larynx
  + Lips
  + Teeth
  + Tongue
    - fastest and most flexible
    - 3 dimensions
    - controlled by multiple muscles
    - Parts
      * tip
      * blade
      * back
      * root
* Most speech sounds have a source and a filter
  + Source: usually vocal folds vibrating
  + Filter: size, shape and material of “tube”
    - Lips, tongue
* Resonators: spaces in the vocal tract where sounds can resonate
  + Oral cavity
  + Nasal cavity
  + Naso-pharynx
  + Pharynx