**INTRODUCTION**

- Phonetic categorization is influenced by spectral contrast effects (SCEs), the perceptual magnification of spectral differences between sounds. For example (after Ladefoged & Broadbent, 1957):

  
  Sentence (unmodified)
  
  Sentence with /æ/-like (high F<sub>1</sub>) frequencies emphasized
  
  Sentence with /ʌ/-like (low F<sub>1</sub>) frequencies emphasized

- SCEs are larger when F<sub>1</sub>-emphasized spectral peaks in the preceding sentence are higher-amplitude or broader-bandwidth (Stilp et al., 2015).

- Despite their widespread influence on speech perception for normal-hearing (NH) listeners, SCEs have never been measured in hearing-impaired (HI) listeners.

- Listeners with sensorineural hearing loss (SNHL) may display broadened auditory filter tuning and/or abnormal suppression. This would broaden the effective bandwidths of suprathreshold spectral peaks in speech.

- Given that broader spectral peaks produce larger SCEs (Stilp et al., 2015), we predict that listeners with SNHL will exhibit larger SCEs than NH listeners in a vowel categorization task.

**METHODS**

- **Participants**
  
  - HI: 14 listeners (ages 51-87) with mild to moderate SNHL from the Greater Lafayette community
  
  - NH: 25 undergraduates with self-reported normal hearing from the University of Louisville

- **Stimuli**
  
  - Precursor sentence: “Please say what /æ/ or /ɪ/ you heard.”

- **Stimuli:** 10-step series of resynthesized natural tokens varying from /æ/ to /ɪ/ spoken by CS (246 ms) [same as in Stilp et al. (2015)].

- **Procedure**
  
  - Each trial presented a precursor sentence then a vowel target (50-ms DI) monaurally (SNHL) or dichotically (NH) over circumaural headphones.

- **NH listeners completed 160 trials/level of filter gain, HI listeners did 200 trials/level of filter gain, logistic regressions were fit to vowel identification data associated with each precursor (low- vs. high-F<sub>1</sub> filter peak).

- 50% points (equal probability of responding “ih” and “eh”) were calculated from the regression equations.

- **RESULTS**

  - Results from 5 NH and 2 HI listeners were excluded from analyses due to an inability to consistently identify unambiguous vowel endpoints, making the final samples 20 NH and 12 HI listeners.

  - For both listener groups, the first two repetitions of each stimulus were treated as practice trials and are not included in analyses.

- **REFERENCES**


