

Request Information

Permalink

# Novel Auditory Diagnostic

Tech ID: 25667 / UC Case 2014-543-0

## ABSTRACT

Researchers at the University of California, Davis, have developed a novel diagnostic for the auditory system.

## FULL DESCRIPTION

Speech is perhaps the most important stimulus that humans encounter in their daily lives. Unfortunately, certain populations have difficulty understanding speech, particularly in noisy conditions, including children with language-based learning problems and cochlear-implant/hearing aid users. Even in the hearing impaired, much of this difficulty stems not from problems in the ear itself, but from how each individual's brain processes the speech sounds. Considering its importance, audiology clinics have few resources to study or diagnose this vast individual variability in real world listening ability. Currently there is no way to rapidly and reliably assess the integrated functioning of the auditory system from brainstem to cortex. For this profound, global health problem, no clinical assessment tool exists.

Researchers at the University of California, Davis have developed a novel method to assess the neural processing of auditory signals by creating experimental speech stimuli that can be used with both traditional and advanced techniques to analyze electrical brain activity. This new method provides a rapid, synoptic view into the functional health of the early auditory system, including how speech is processed at different levels and how these levels interact. Further, this technology will provide clinicians a quantum leap in diagnostic power, enabling them to provide customized and valuable treatments for patients.

## APPLICATIONS

- ▶ Diagnostic for auditory system

## FEATURES/BENEFITS

- ▶ Easy implementation in the clinic
- ▶ Ability to analyze relations among different levels in processing
- ▶ Uses actual speech / complex sounds, which assess real world listening ability

## PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,729,387	08/04/2020	2014-543

## ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [Silent Speech Interface Using Manifold Decoding Of Biosignals](#)
- ▶ [Using Automatic Speech Recognition To Measure The Intelligibility Of Speech Synthesized From Brain Signals](#)

## CONTACT

Victor Haroldsen  
[haroldsen@ucdavis.edu](mailto:haroldsen@ucdavis.edu)  
tel: 530-752-7717.



## INVENTORS

- ▶ Bishop, Christopher W.
- ▶ Miller, Lee M.
- ▶ Moore, IV, Bartlett D.

## OTHER INFORMATION

### KEYWORDS

diagnostic for auditory system, neural processing of auditory signals, speech processing, speech stimuli, audiology

### CATEGORIZED AS

- ▶ **Medical**
  - ▶ Diagnostics
  - ▶ Other
  - ▶ Research Tools
  - ▶ Screening
- ▶ **Research Tools**
  - ▶ Other

### RELATED CASES

2014-543-0

University of California, Davis

Technology Transfer Office

1850 Research Park Drive, Suite 100, ,  
Davis, CA 95618

Tel: 530.754.8649

[techtransfer@ucdavis.edu](mailto:techtransfer@ucdavis.edu)

[https://research.ucdavis.edu/technology-  
transfer/](https://research.ucdavis.edu/technology-transfer/)

Fax: 530.754.7620

© 2016 - 2020, The Regents of the University of California

[Terms of use](#)

[Privacy Notice](#)