HEARING A GENE OF HEARING

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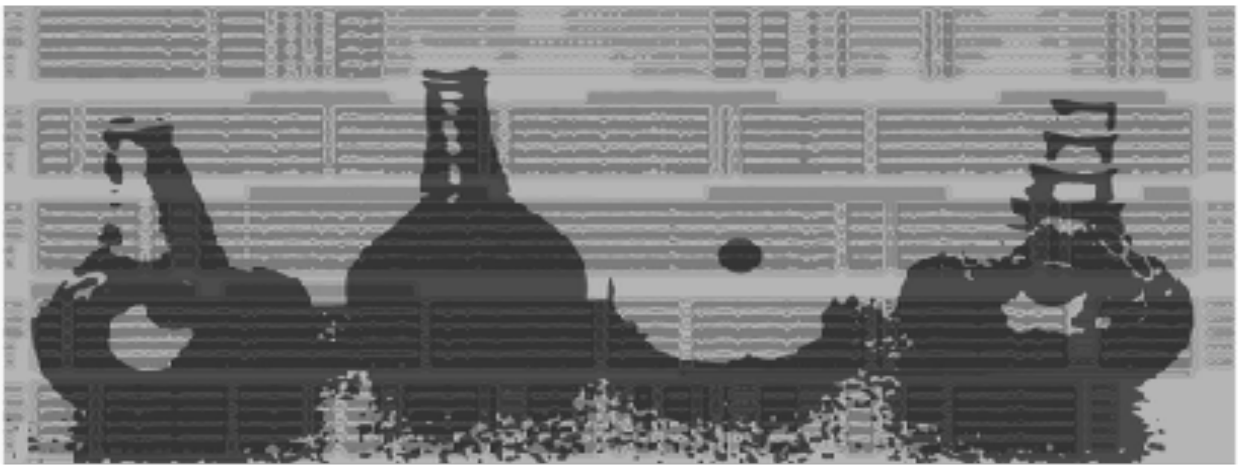

Hearing a Gene of Hearing is composed from the GJB2 gene that is important for human hearing. The gene provides instructions for making a protein that transports potassium ions in cells, which is important in transducing sound waves on the ear drum into electrical impulses in the cochlear. For this reason, mutations of the GJB2 gene can cause what is called “non-syndromic” hearing loss because it does not have any outward symptoms.

The composition of this sonification consists of a mapping from genetic components of the GJB2 gene to percussion notation for a Ubang clay drum. A subsequence of the GJB2 gene from 4 different species (Human, Orangutan, Dog, Mouse) was mapped to 4 instrument scores to be played in parallel on 4 Ubangs. The parallel performance of 4 gene sequences by 4 musicians explores the concept of collaborative sonification. The piece also explores data sonification as a medium for musical performance and aesthetic experience.

Hearing a Gene of Hearing premiered in the Concert Programme curated by Charles Martin for the International Conference on Auditory Display (ICAD), and was performed by in Canberra in July 2016. The piece was performed by the ANU Experimental Music Studio directed by Charles Martin and performed by Benjamin Drury (Human), Millie Watson (Orangutan), Ellen Falconer (Dog) and Ben Harb (Mouse), on 6 July 2006 at Lewellyn Hall in the ANU School of Music, Canberra.

Video - https://stephenbarrass.com/2016/07/09/hearing-a-gene-of-hearing/

The patterns that emerge are unusual because they do not have any regular or repetitive rhythm. This sonification of genetic patterns may help the listener understand more about the structure of DNA.