

# SoundScapes

Sonification as a platform for communication of three-dimensional data sets

## About the Project

The project SoundScape wishes to gather data from BlueCC on enzymatic hydrolysis and present it as sound instead of the more common use of images and oral presentations. The inspiration for this comes from the Hubble Space telescope and the use of sonification in nonspeech audio to convey information (NASA, Space Physics Data Facility).

During enzymatic hydrolysis, protein structures are broken down into smaller proteins, commonly with commercial interest. To investigate this breakdown, data are often generated in three dimensions, time, wavelength, and intensity of light absorbance. We wish to illustrate this change in protein structure using sonification instead of traditional visual presentations.

Data in three dimensions may be difficult to communicate in a two-dimensional image and the interdependency of datapoints in three dimensions is difficult to visualise. With sound, there are opportunities to transfer variation in data and present it as the change in a series of different parameters, such as pitch, volume, instrument etc. By organising all these parameters on a time dimension we aim to create an atmosphere where data is perceived only through sound

SoundScape will utilise already collected data from the BlueCC library of experiments and convert it to sound using commercial software. The different parameters will be tuned so that the level of protein degradation is expressed as the amount of harmony in the audio output; more harmony equals more protein degradation.

Communication of the results is the very foundation of this project. Sound is a communication tool that may be used to disseminate research to a broad range of target audiences. No knowledge or language barriers can hinder that.

Target audience is youth, people who are generally uninterested in research results, people who need help to understand the sometimes difficult language used in scientific dissemination, and other scientists willing to expand the horizons of conceivable dissemination.



## Project Overview

3. Additional Call | 2023

### Project Partners:

- **Dr Runar Gjerp Solstad Bouman**  
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### Priority Area:

Dissemination of research and results



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