Researching the language of bees worldwide

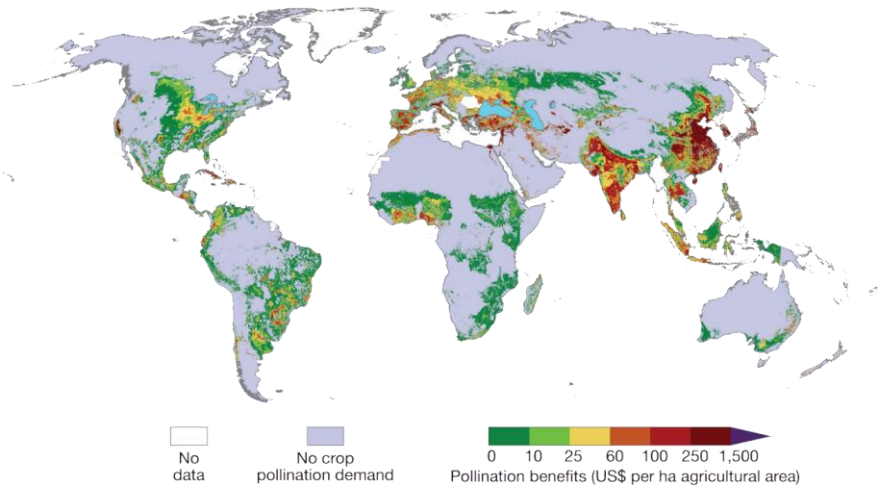
The BeeRing in the botanical garden

Pollinators and it's demise

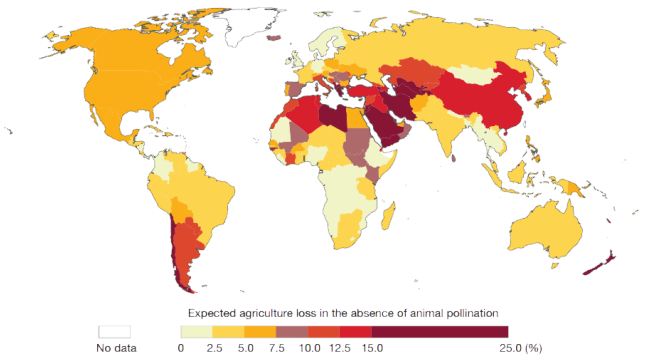
UN and FAO have registered around 20 000 species of wild bees that pollinate plants, they help to keep the biodiversity, and our food growing. The estimated annual value of corps that this pollinator help is estimated in **$577 billions dollars each year**.

However pollinators, as Bees, are under a very dangerous threat. They have an extinction rates that are 100 to 1000 higher than any other species due to human impacts on the environment.

If the actual trend continues, by the next decades around 40 percent of invertebrate pollinators will go extinct, changing the global crop supplies, increasing prices for consumers and crating losses of $160 -$190 billions of dollars annually, getting worse over time.



Pollination service contribution to the crop market output in terms of US$ per hectare of added production
Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), 2016



Safeguarding pollinators and their values to human well-being, ipbes, 2016
Biodiversity Convention 2016-2021, UN, 2021
FAO's Global Action on Pollination Services for Sustainable Agriculture, FAO, 2021
State of the Global Climate 2020, WMO, 2021

Center for the well-being and study of the bees at a Botanical Garden

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BeeRing Inc. is a non-profit organization founded in Vero Beach, Florida, with the only purpose of understanding and mitigating the growing threat and disappearance of the bees and other pollinators around the world. BeeRing has two fundamental missions:

1) Promoting people's awareness on the conservation of bees and their crucial role in human life and the planet's ecosystem.

2) Conducting and facilitating noninvasive research on bees going from basic studies on mechanisms of communication and behavior, to applied studies on bee breeding and colony supervision.

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To fulfill our missions that we have designed. We are currently fabricating bee sanctuaries via **modular hexagonal-shaped** huts (labeled as BeeRing) housing as many as 30 bee natural habitats to conduct not only educational/awareness events allowing also contemplative activities inside the BeeRing, but also research work as each individual habitat is equipped with noninvasive sites to install acoustic and sensing devices, such as miniature microphones, thermocouples, and hygrometers. Our first BeeRing prototype was built in Vero Beach, Florida, recently we built a fully functional BeeRing in Jardines de Mexico, the largest botanical garden in Mexico, located in Cuernavaca.

A botanical garden would be a perfect place to house a BeeRing and play a unique role on not only promoting people's awareness on the conservation of the bees but also performing crucial studies and research work on them.

We must remember the initial commitment of the garden about the conservation of pollinators, such as bees and butterflies. In the garden effort to keep the biodiversity of the region alive to the future generations.

BeeRing built in *Jardines de Mexico* botanical garden, Cuernavaca, Mexico

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Botanical gardens around the world are missing the key protagonists, the bees, essential not only to the sustainability and wellbeing of countless ecosystems but also to human food production, they pollinate **1 in 3 bites of food we eat**.

- Botanical gardens need to become sanctuaries for the bees as their habitats would be in a protected site and the nectar source would be inherently abundant, and most importantly free of pesticide.

- A single BeeRing can not only house as many as thirty natural habitats equipped with noninvasive devices to conduct research but also be used to conduct contemplative and educational indoor activities.

- BeeRing visitors would be motivated to safeguarding the environment, and securing food justice through education, research, habitat creation, and advocacy

Our goals

The BeeRing aims to build interconnected multifunctional centers globally to:

- Promote awareness in people about the importance of bees.
- Inspire individuals and communities to act as advocates for the well-being of the bees and their natural environment.
- Perform didactic sessions to students and botanical garden visitors to promote the understanding of the bees in our world.
- Carry out research work on bees in their natural and commercial habitat (beekeeping).
- Facilitate researchers around the world to carry out studies in the BeeRing and share results.
- Investigate alternatives to produce honey in a sustainable way and in a habitat like the natural one.

The BeeRing

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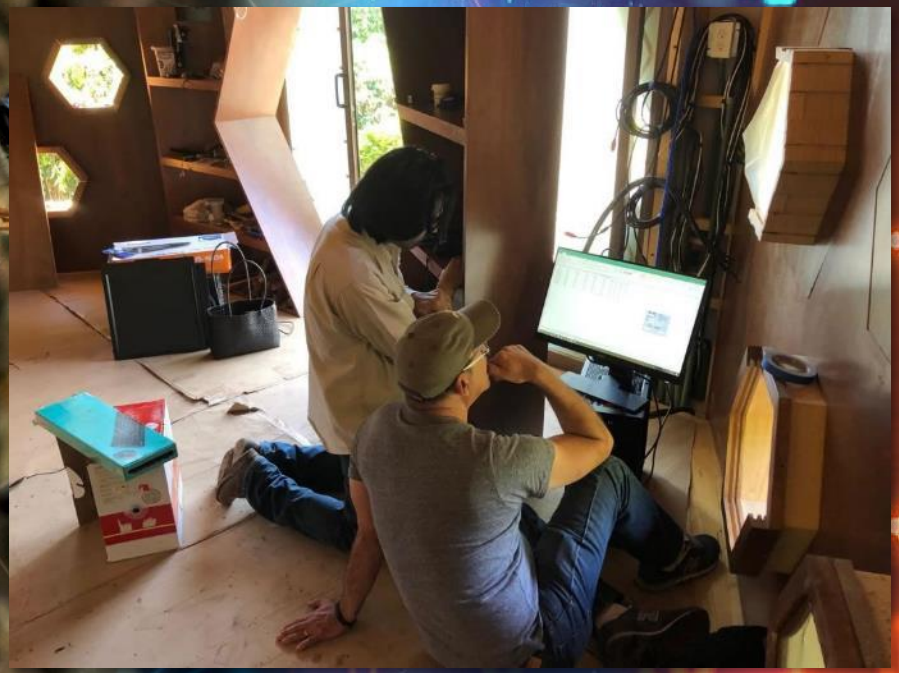
Research

Science and technology at the service of the conservation and care of bees



The data obtained is essential to understand the conditions of bees and to understand them in greater depth.

Non-invasive verification of the queen's presence

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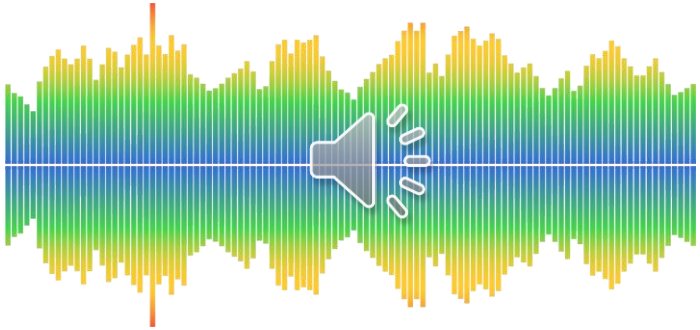
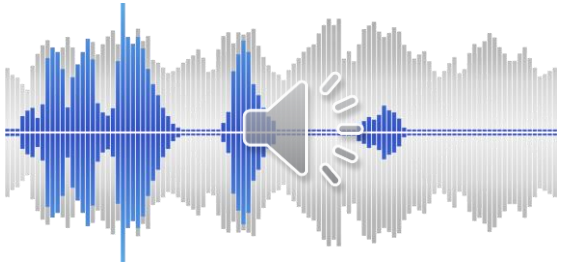
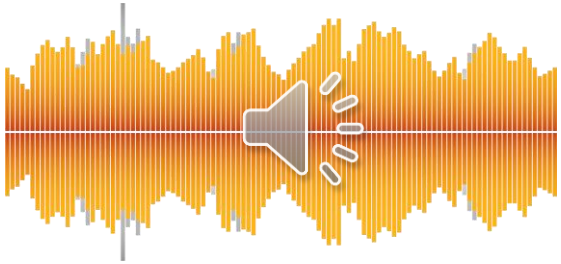
Recorded Sound



Separation



Queen



Bee

Drone

Audio extracted using a computational method for separating a multivariate signal into its underlying components (ICA) from The BeeRing research (work in progress) using an audio of a hive and a queen.

Insemination

- The bees housed in the BeeRing fit in a variety of passive and visitor-friendly species.
- These friendly bees are the result of years of research and experience in the field of bee breeding.
- The queens are inseminated instrumentally by the BeeRing staff in a controlled laboratory.

Our team

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Bees sanctuary

Javier Camilo Franco

Entomologist, Founder and CEO of BeeRing. Beekeeper with more than 40 years of experience with the bees, working with a humanistic, ecological, and respectful vision for these important species

Antonio Quintero

Project Manager.
Social Anthropologist and artist with extensive experience in diverse fields such as, design and implementation of automation systems, software development, and research data management

Jesús A. Domínguez (PhD)

Research Management Consultant
Chemical Engineer and Computer Scientist with more than 30 years in multidisciplinary research projects, including NASA projects at Kennedy and Marshall Centers

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