



GDM

GLOBAL DESIGN
MISSION

Our Philosophy

- Environmental awareness
- Framework to think critically and apply knowledge

What is Biomimicry?

Emulation of nature's patterns, designs, and strategies



Woodpecker's head inspires shock absorbers

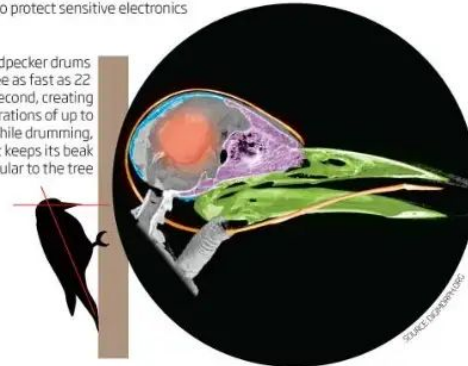
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Brain/Electronics

There are four systems in place to protect the woodpecker's brain

These have been copied in a new shock absorber to protect sensitive electronics

A woodpecker drums a tree as fast as 22 beats a second, creating decelerations of up to 1200g. While drumming, it keeps its beak perpendicular to the tree



WOODPECKER

Spongy bone/Glass beads

The bone's porous structure stops low frequency vibrations from reaching the bird's brain

A layer of closely packed glass beads helps absorb shock and protect the microelectronics

Hyoid/Elastic layer

This solid, springy and bony support for the tongue, unique to the woodpecker, evenly distributes loads from vibration

Mimicked in the shock absorber by a load-spreading layer of rubber

Beak/Outer case

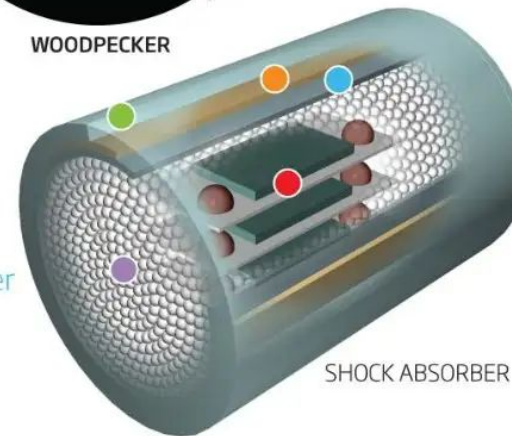
The woodpecker's beak is extremely strong and does not bend or fracture

A steel metal enclosure is the first line of defence for the shock absorber

Skull/Aluminium layer

There is little room between the skull and the brain for cerebrospinal fluid, reducing the transmission of vibrations

A second layer of metal provides extra protection to the microelectronics



SHOCK ABSORBER



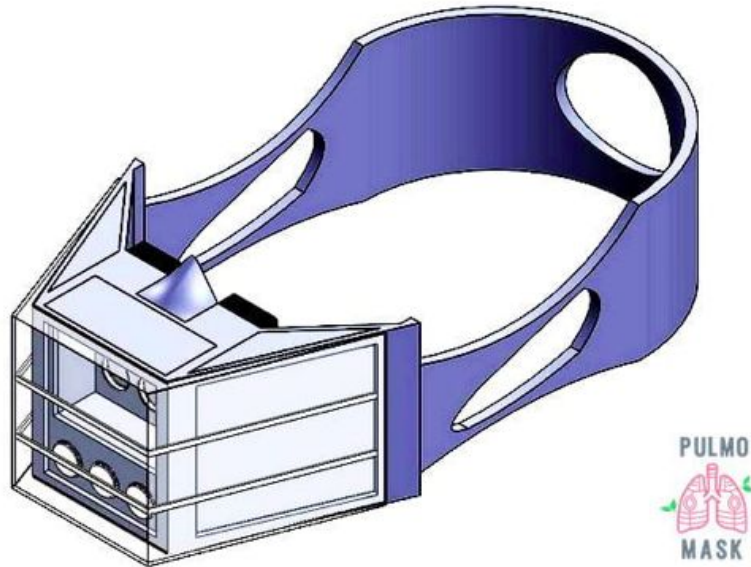
What do we do?



- Year long project with team to design a creative project, design, service, idea, etc. to address a global sustainability issue using BIOMIMICRY

<https://biomimicry.org/>

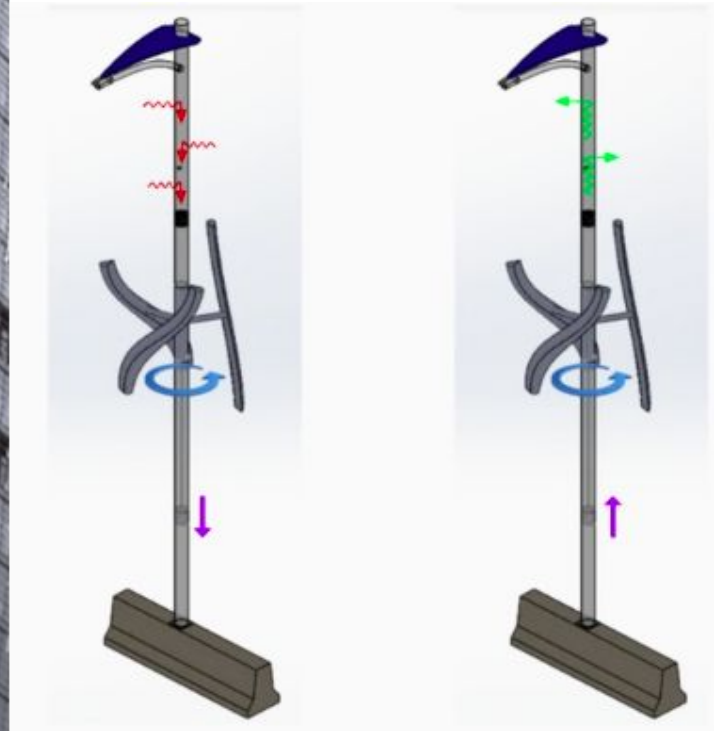
Past Projects



PulmoMask
(Smog filtration)



Pine Cool
(Evaporative cooling)



EcoLight
(Sustainable lighting)

Our Project Timeline

- September: Formation of teams (< 8 people / team + team leader)
- Oct. - Dec: Research and brainstorming phase
 - Use applicable biomimicry concepts to formulate ideas
- Jan. - Mar: Designing and planning phase
- Apr. - May: Creating project components and submission of project
 - Project details TBA

Meeting Schedules

- Teams will meet on their own: weekly, or biweekly
- The entire club will meet: ~once a month



Commitment?

- 1-3 hours per week outside of meetings (<60 min)



Resources?

- Team leaders
- Executive board
- Asknature.org

Our Linktree



Communication?

Slack



Questions?