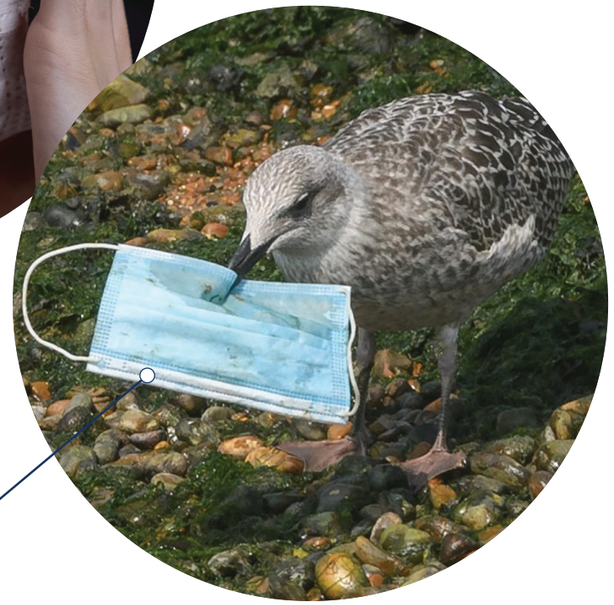
Researching Negative Impacts of Disposable Masks

Research participants described discomfort when wearing a mask for long periods of time, including: headaches, dry skin, and ear fatigue.



Research participants are concerned about long-term environmental impacts caused by disposable masks.

Problem Areas

- Discomfort when worn for long periods
- Not biodegradable
- Lack of recycling procedure

Design Opportunity

With a focus on the Coronavirus Pandemic as a contextual research topic, a clear pattern emerged describing concern over both comfort and environmental impacts as it relates to the use of disposable masks. Based on the research, we see an opportunity to produce both a human-centric as well as planet-centric solution to these problems.

PHOTOS: UNSPLASH, GREEN MATTERS

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Design Solution Life Cycle

Corn is a globally attainable, large-scale, and low-cost raw material

Corn fiber has biological affinity, excellent antibacterial, and anti-fungal properties

Masks made of polylactic acid have a 20-70% improvement in filtration performance compared to traditional materials

The ergonomic design of the mask results in a more comfortable user experience

Cost reduction and natural degradation

Degraded masks act as fertilizer, improving soil quality

PHOTOS:
UNSPLASH, 500PX, GOOGLE IMAGES, 123RF

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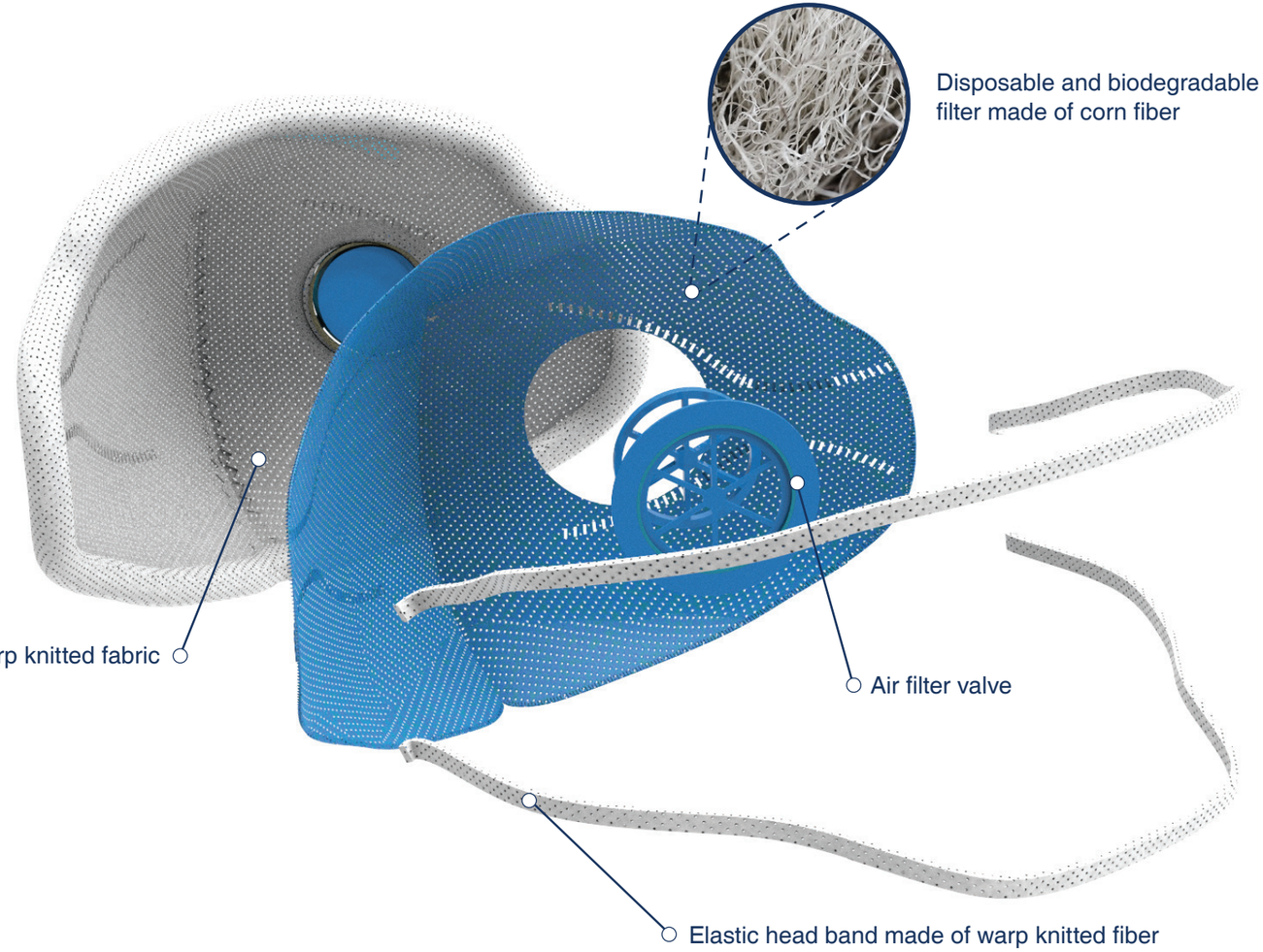
Developing a Comfortable, Environmentally-Friendly Alternative

Wide edge conforms to
user's face for extra comfort



Disposable and biodegradable
filter made of corn fiber

Washable, soft, warp knitted fabric

Air filter valve

Elastic head band made of warp knitted fiber

PHOTOS: UNSPLASH, 500PX

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