bluearth

NATURALLY INSPIRED BRANDING

OCT
2018

Biomimicry and Innovation

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Biomimicry and Innovation

Agenda

- Challenge
- Biomimicry
- Innovation
- Examples
- Discussion

The Challenge

1917

2018

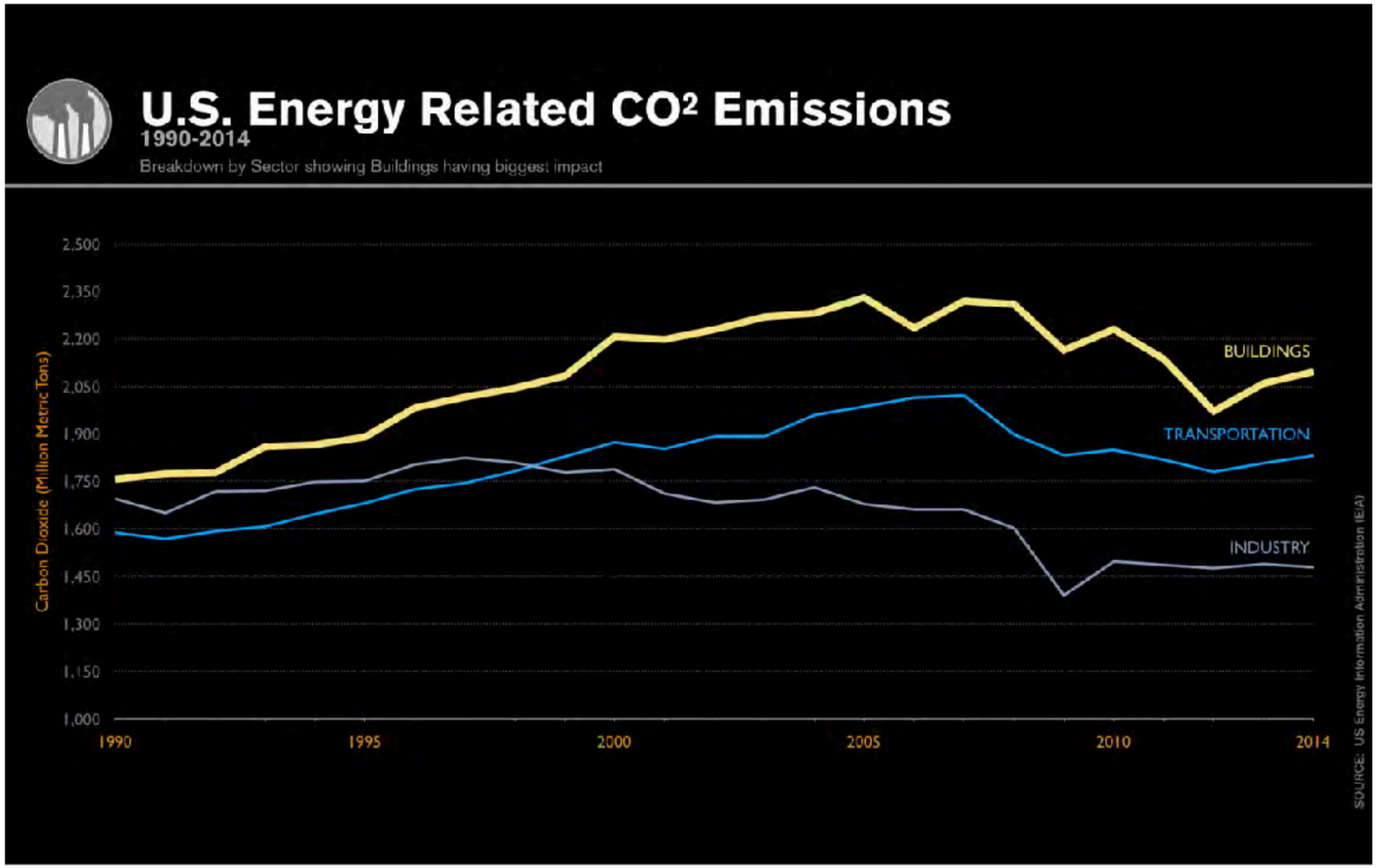
The Challenge

LIVING
BUILDING
CHALLENGE℠

The Solution Today

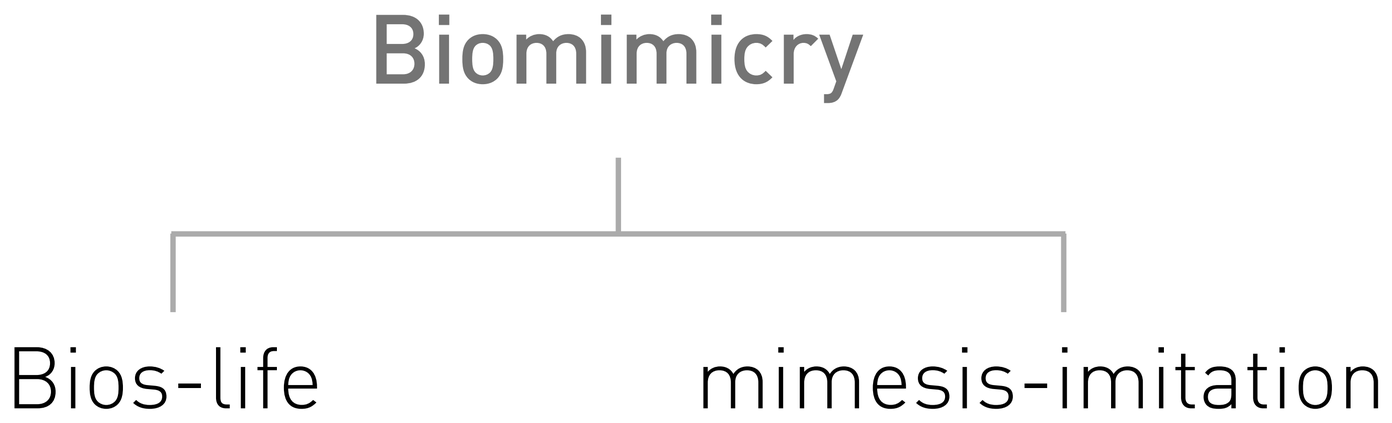
The Solution Today

The Solution Today



SLIDE: Eric Corey Freed

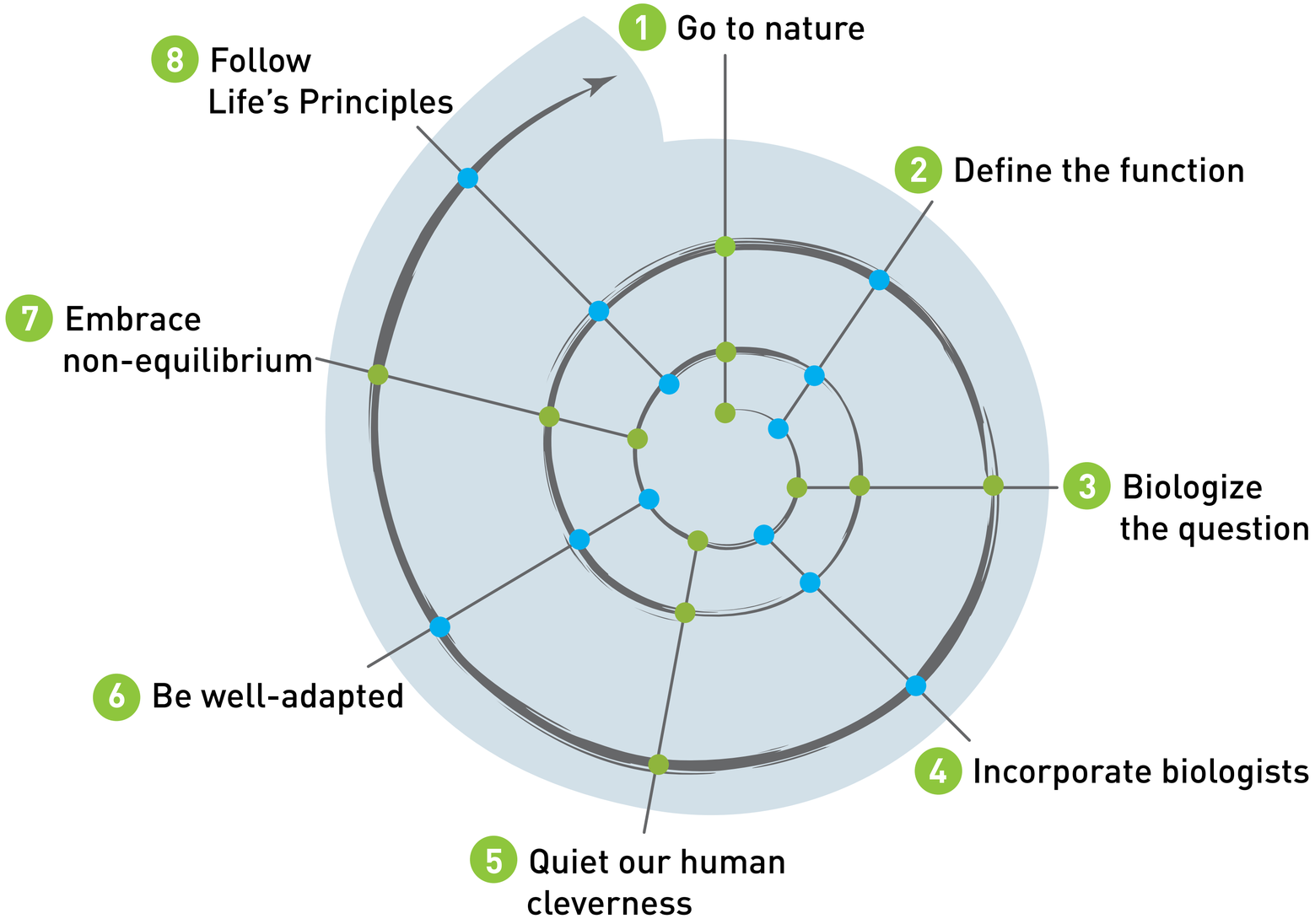
Employees who work in environments with natural elements report a 15% higher level of well-being, are 6% more productive and 15% more creative overall.


Biomimicry
Bios-life
mimesis-imitation

Innovating with Biomimicry
8 Essential Elements of Biomimetic Innovation

Innovating with Biomimicry

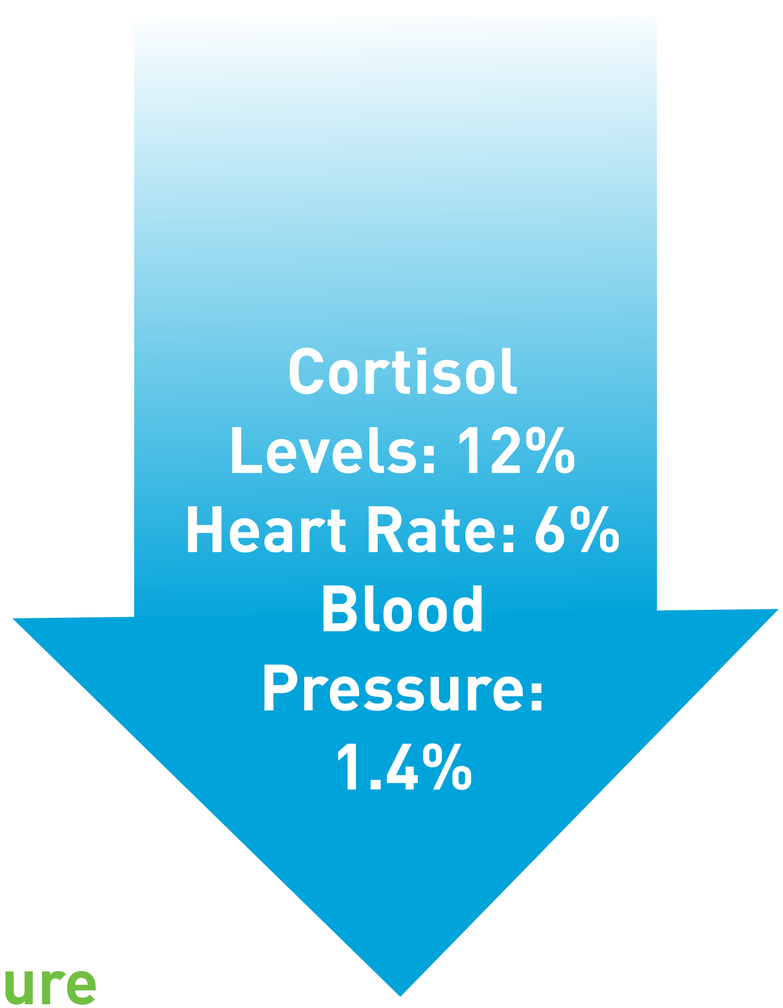
8 Essential Elements of Biomimetic Innovation

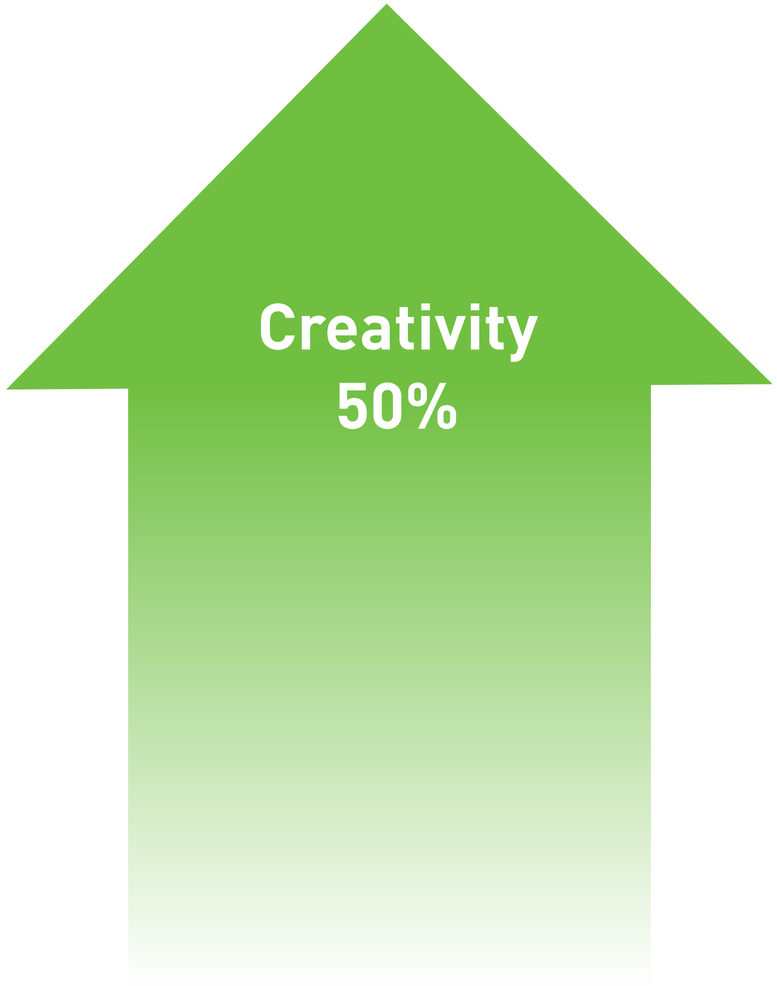



Element 1
Get Out!

Go to Nature

Getting into Nature





1 Go to Nature

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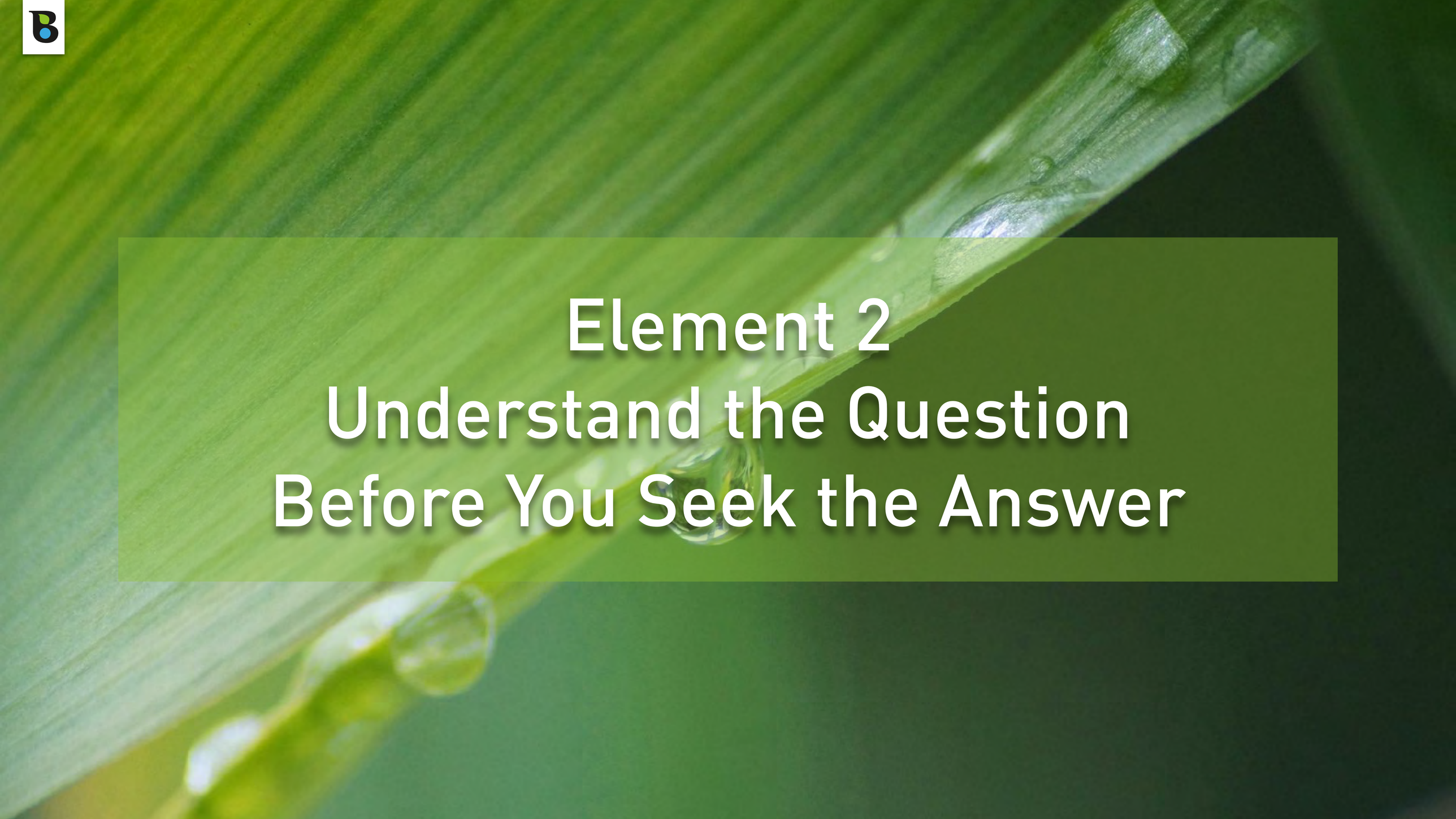
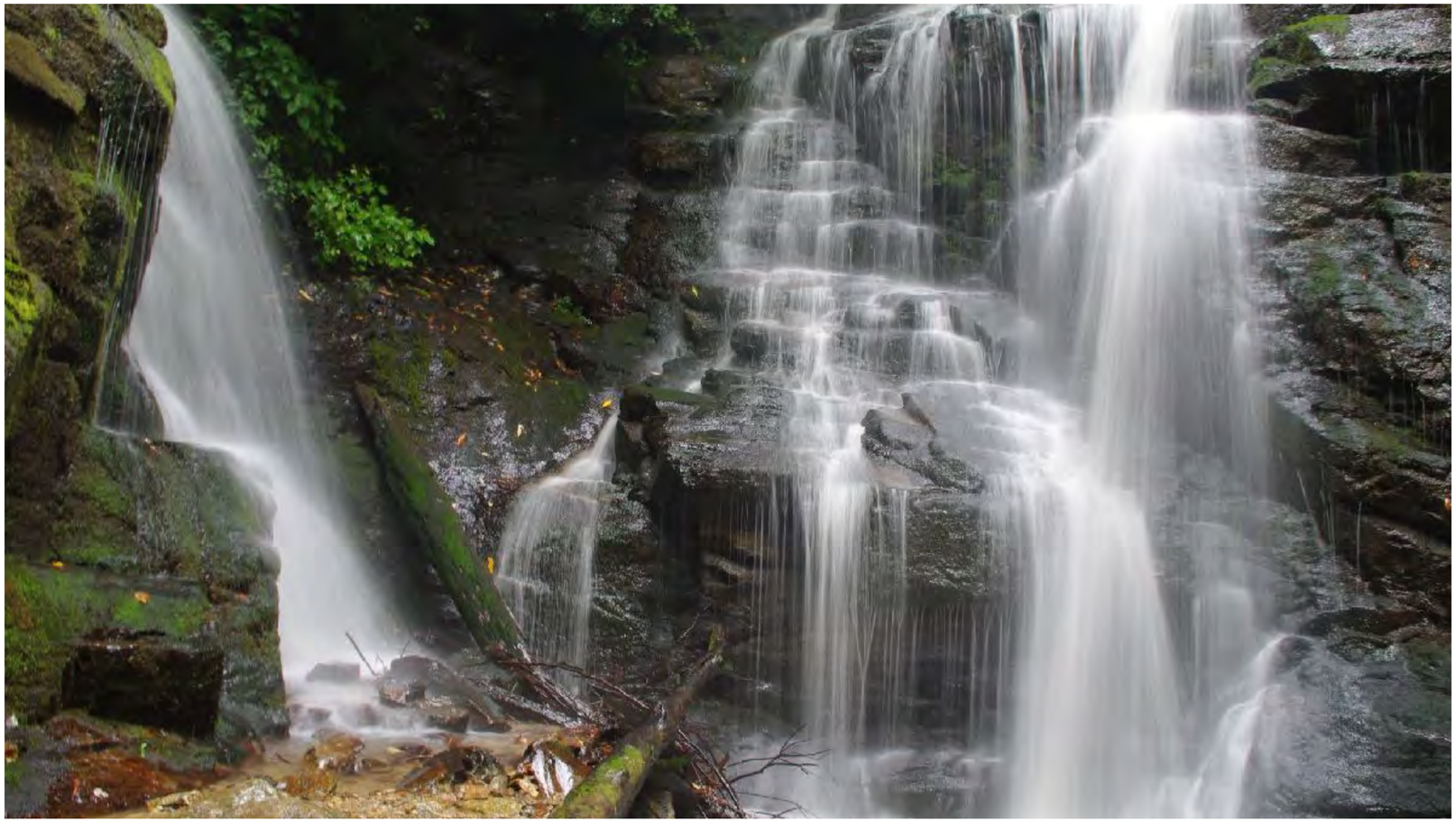


Element 2
Understand the Question Before You Seek the Answer

Define the Function



2 Define the Function

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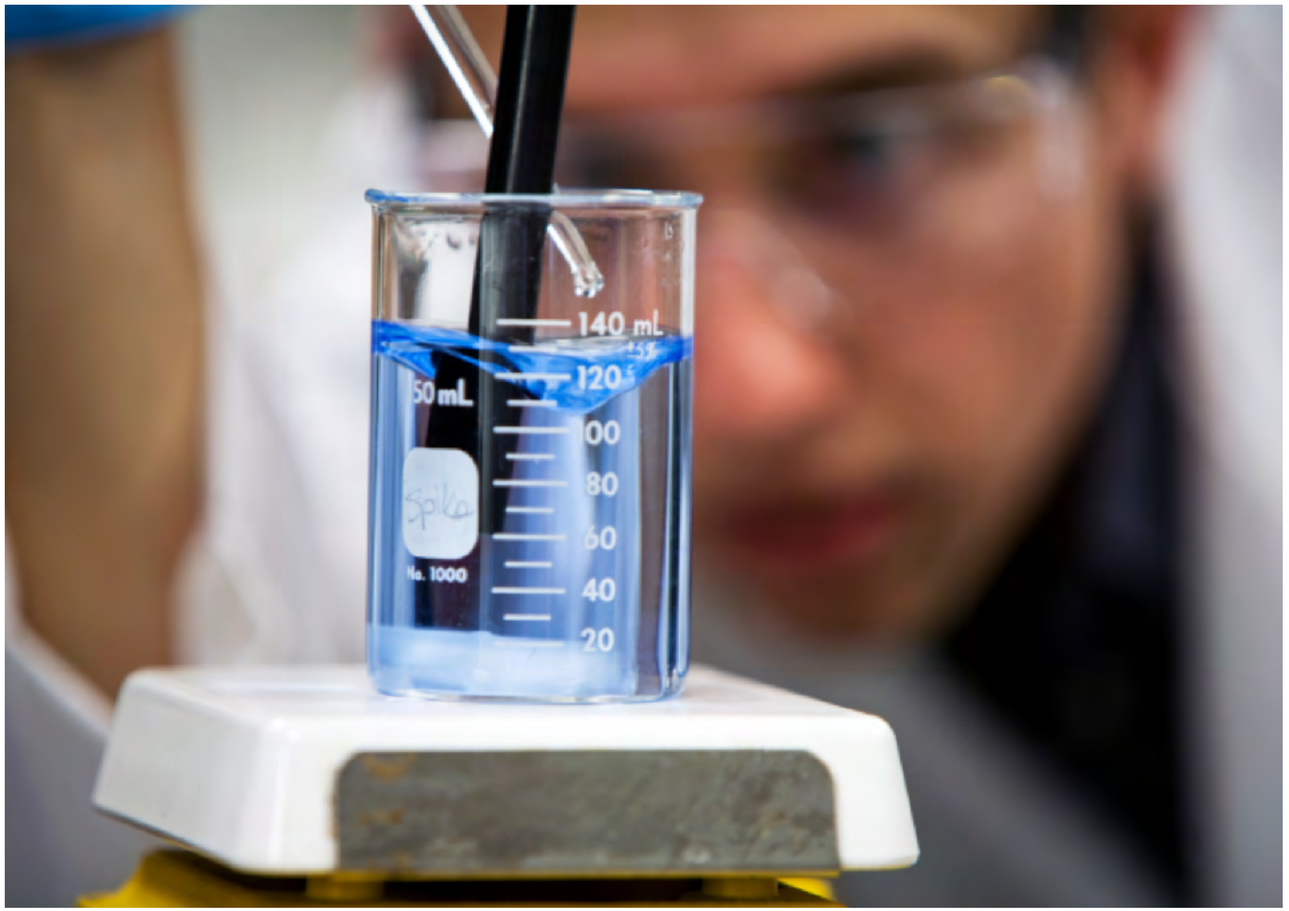
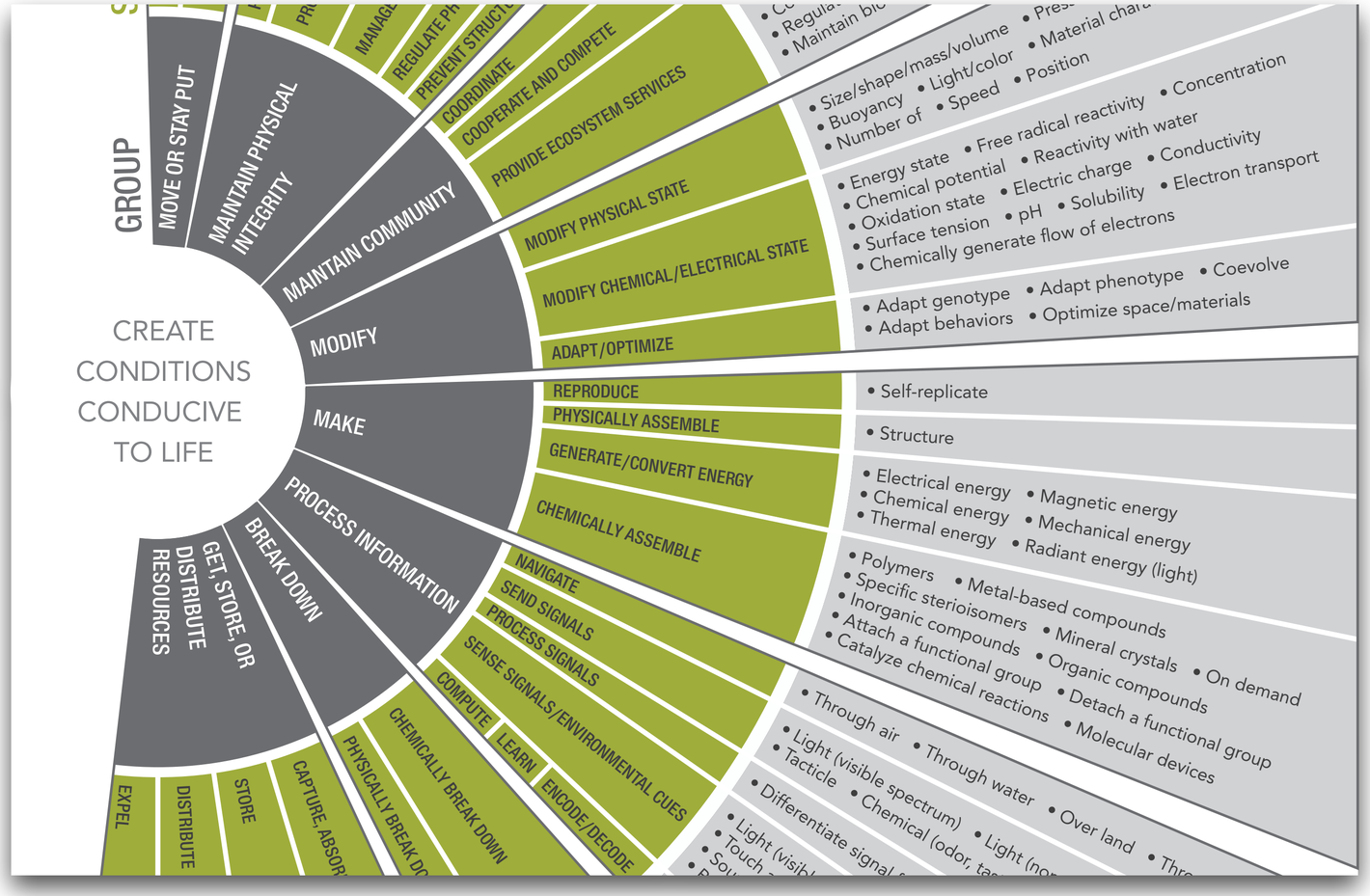


2 Define the Function

Biomimicry Taxonomy



2 Define the Function

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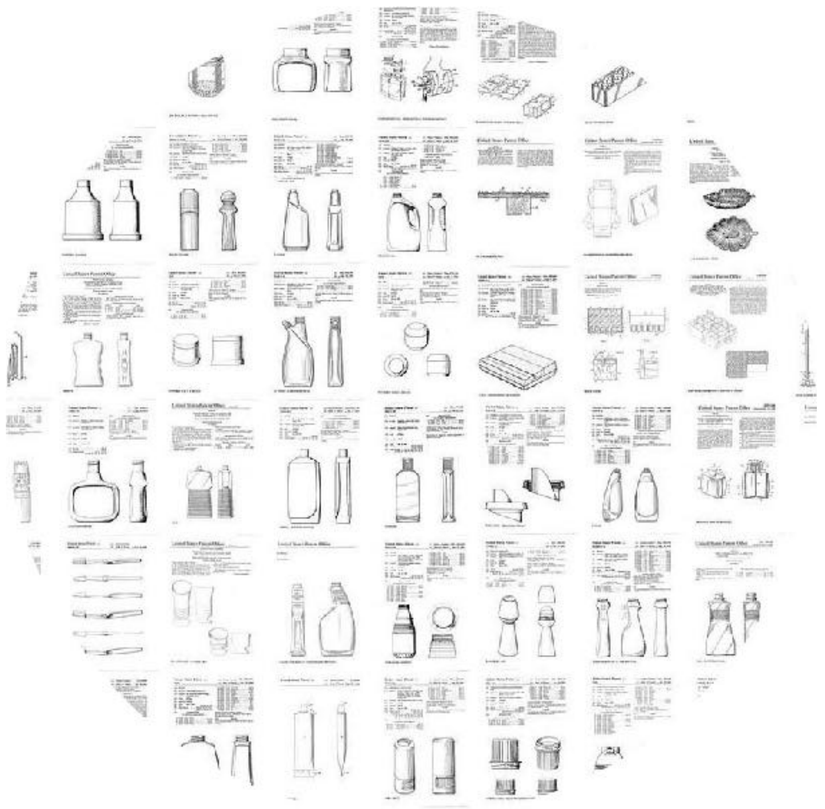
Element 3
Broaden Your Solution Space with Biological Research

3 Biologize the Question

Broaden your Solution Space



3 Biologize the Question

Broaden your Solution Space

3 **Biologize the Question**

Broaden your Solution Space

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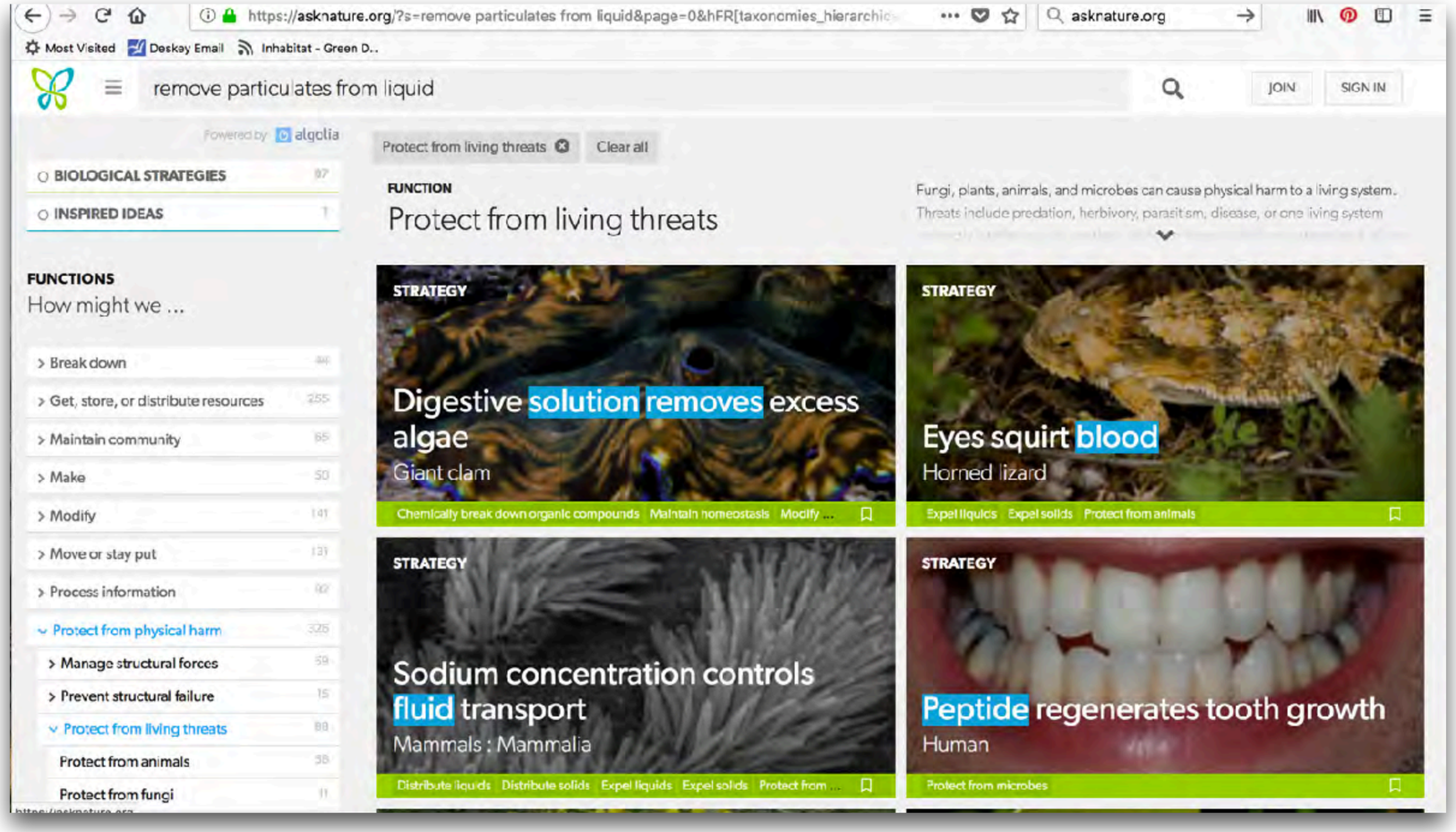
Broaden your Solution Space

88%

asknature.org



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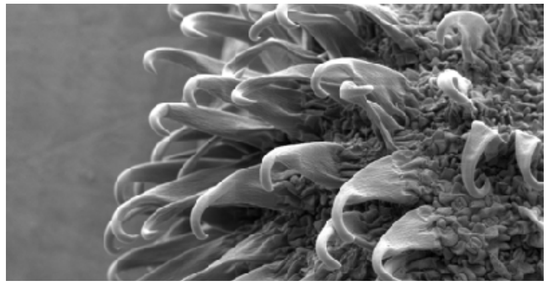

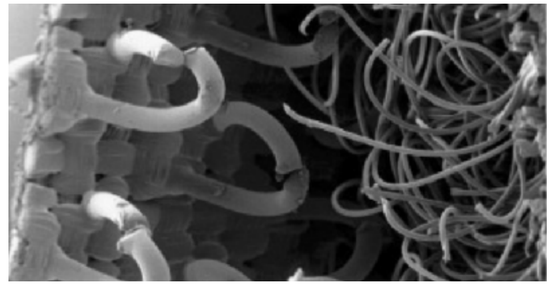

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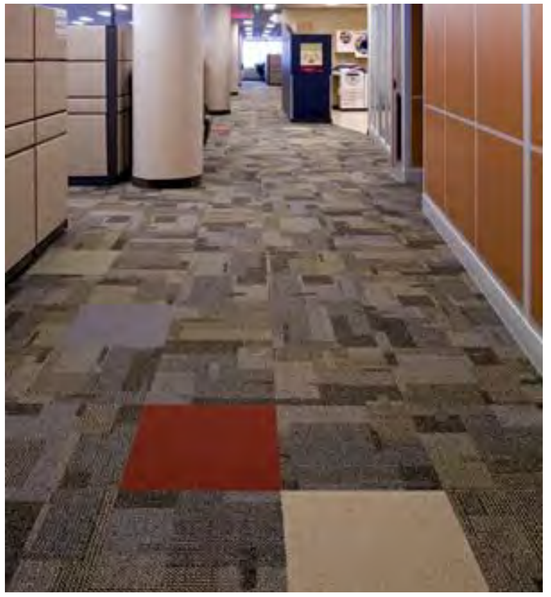

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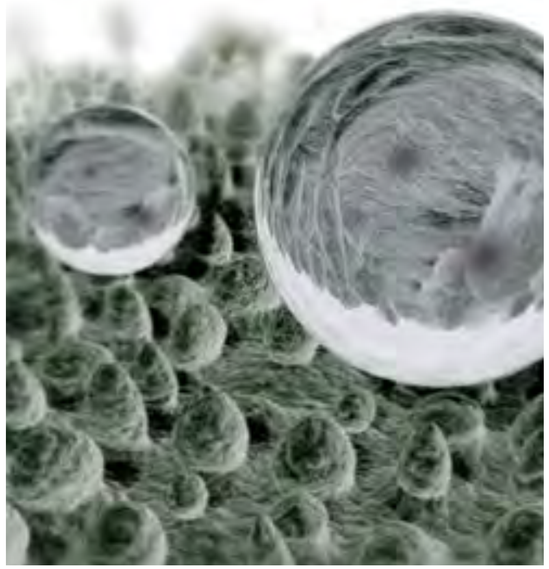

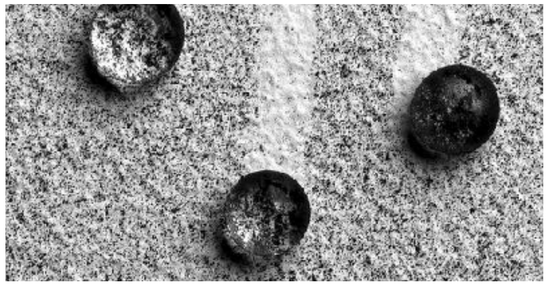

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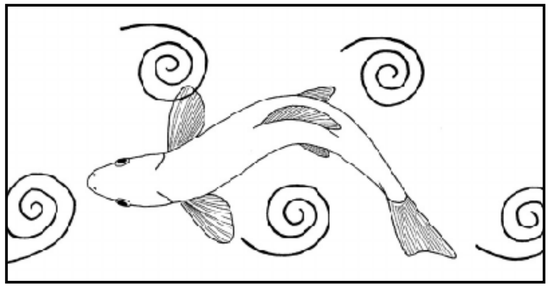

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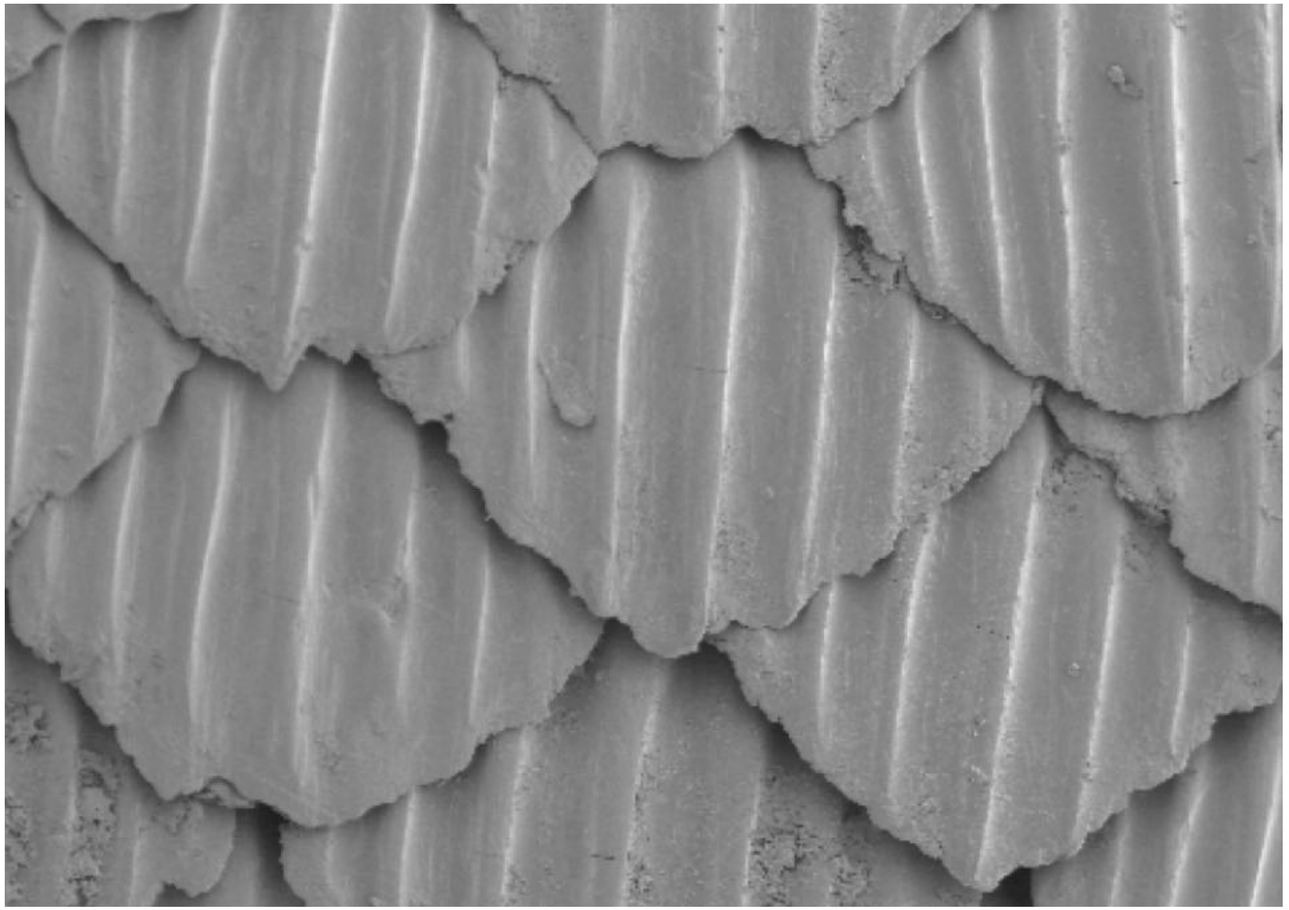

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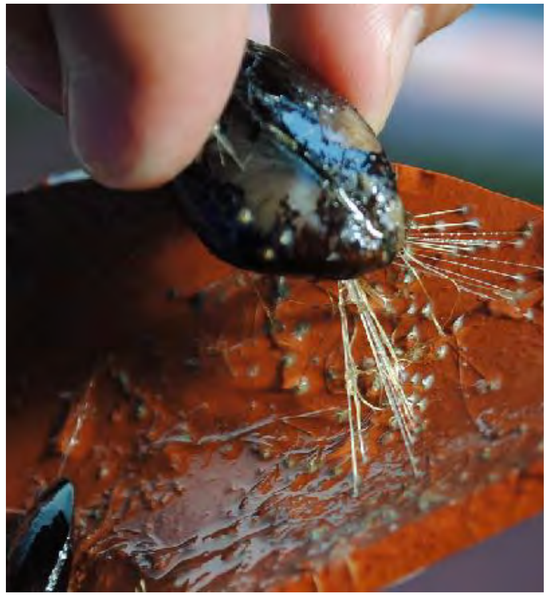

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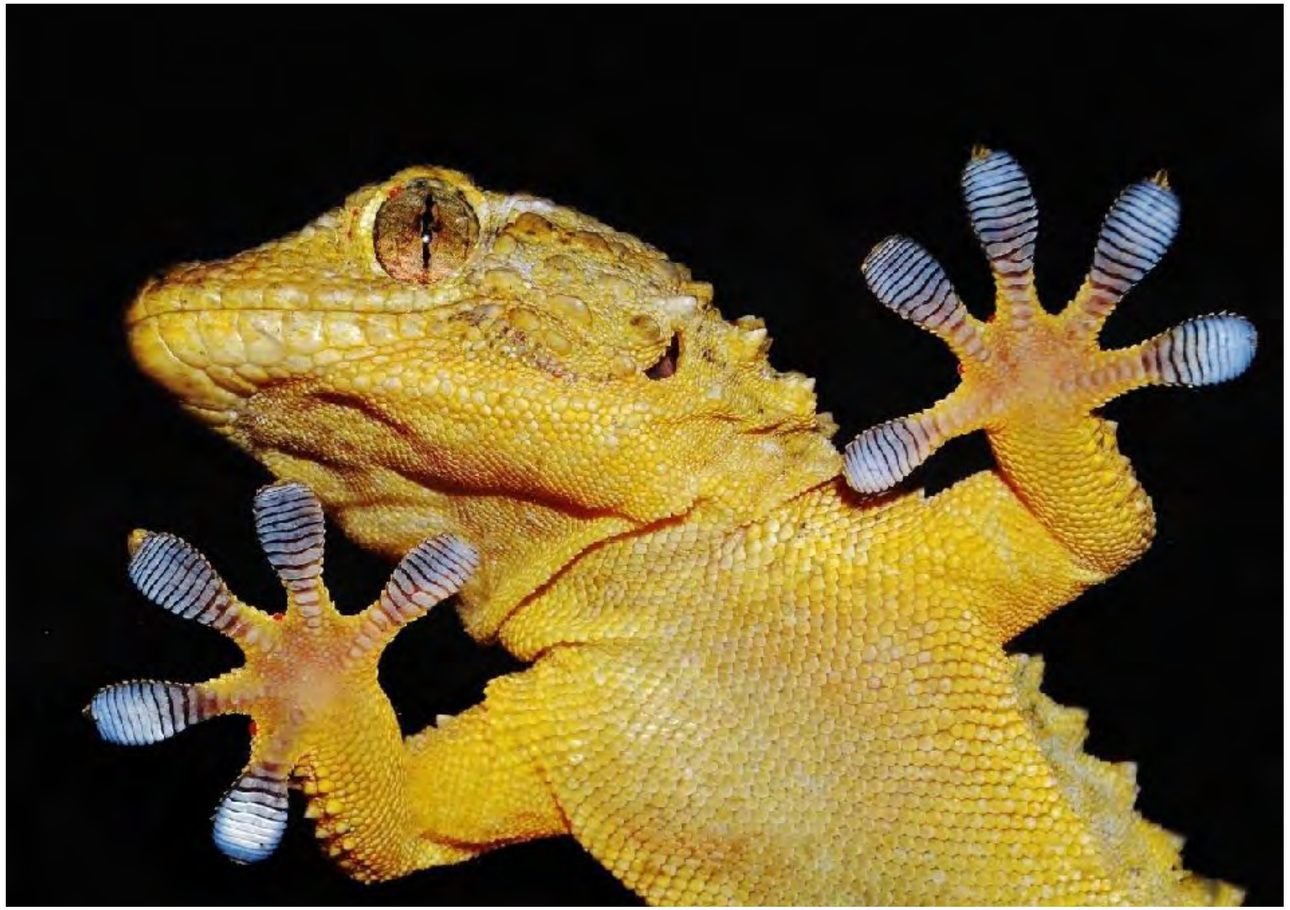


3 Biologize the Question

Element 4
Biologists Are
Key Design Team Members

Incorporate Biologists

Biomimicry Thinking
for Design
Oracle, Arizona

Discovering Nature's
Genius
Wolf Creek, Montana

Discovering Nature's
Genius for Social
Innovation
Wolf Creek, Montana

Incorporate Biologists

SUSTAINABLE PACKAGING COALITION®

BIOMIMICRY 3.8

Green Umbrella
REGIONAL SUSTAINABILITY ALLIANCE

BIOMIMICRY INSTITUTE

Green Streets
Environmental Services

GREAT LAKES BIOMIMICRY

THOMAS MORE COLLEGE

UNIVERSITY OF Cincinnati

PIXEL & TIMBER

Element 5
Quieting Human Cleverness

We are Not the First

5 Quiet our Human Cleverness

We are Not the First

3.85b vs 200k

We are Not the First

3.85b

We are Not the First

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	Oct	Nov	Dec

We are Not the First

Dec

We are Not the First

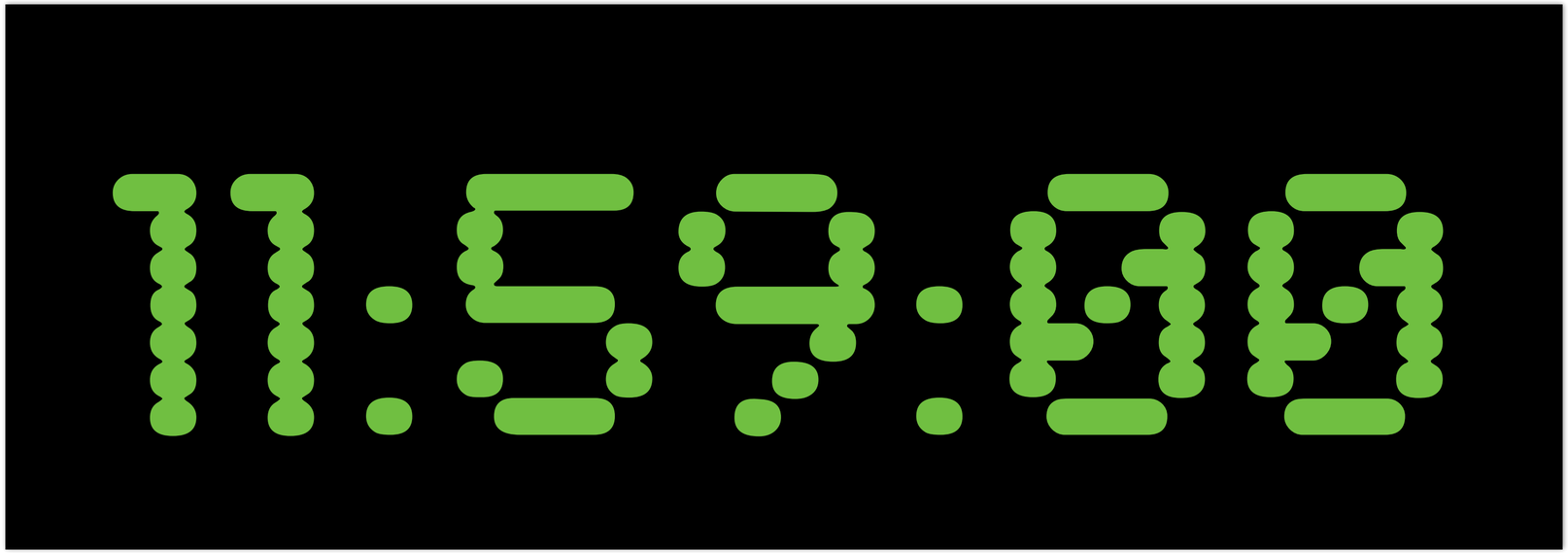
We are Not the First

31

We are Not the First

5 Quiet our Human Cleverness

We are Not the First



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We are Not the First

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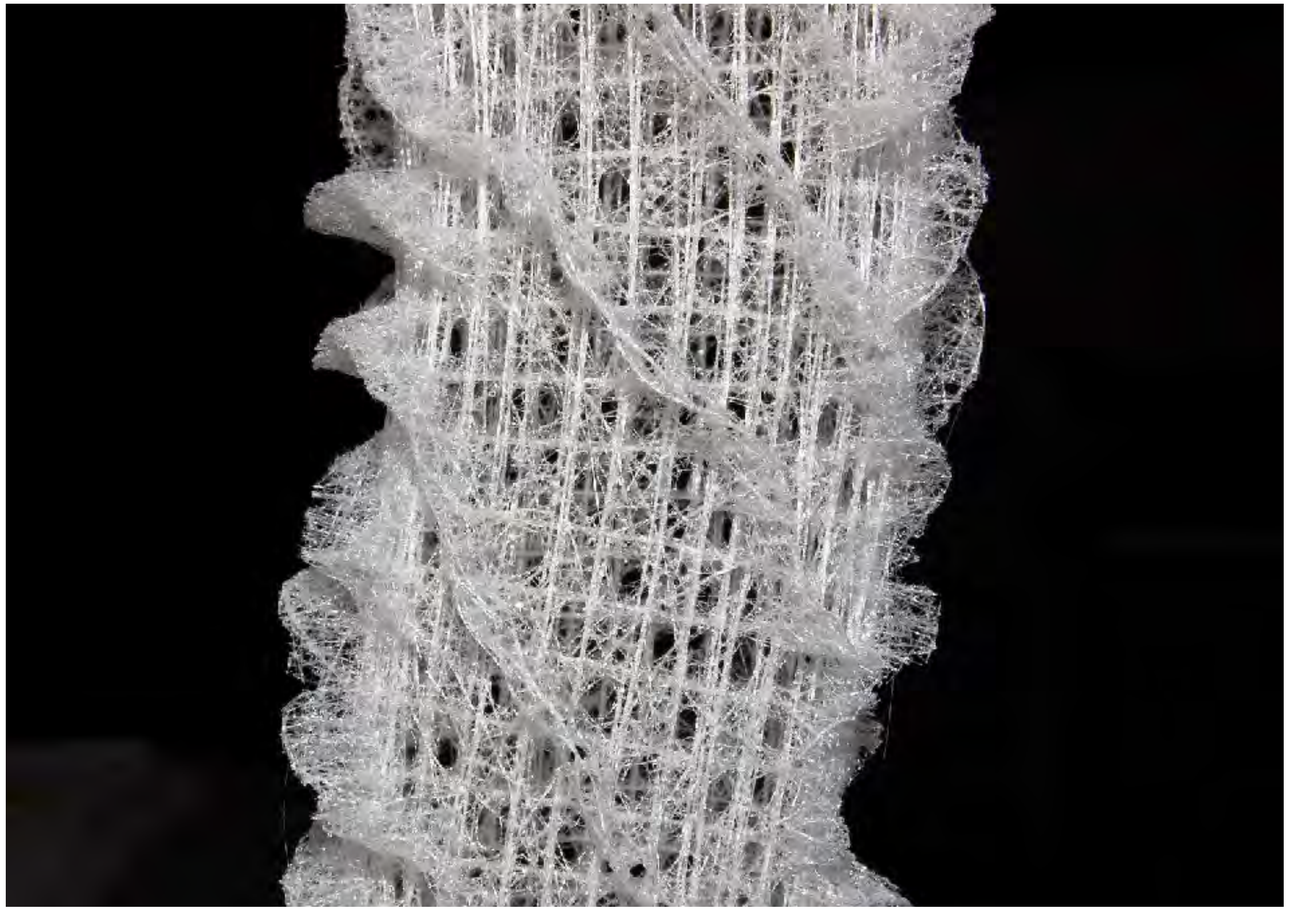

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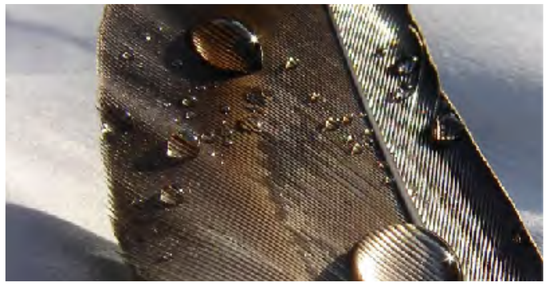

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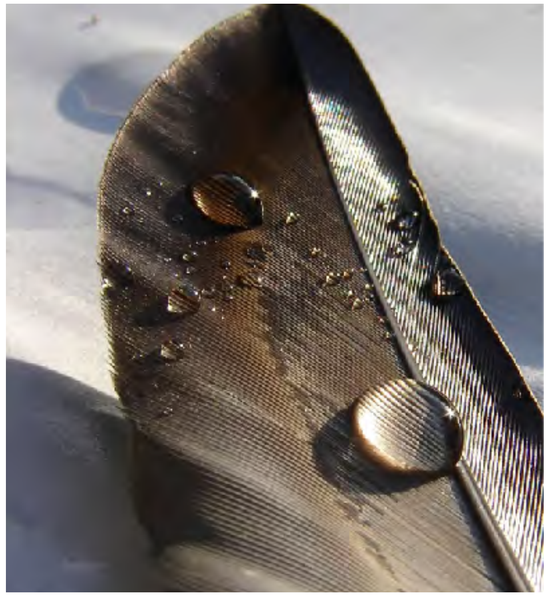

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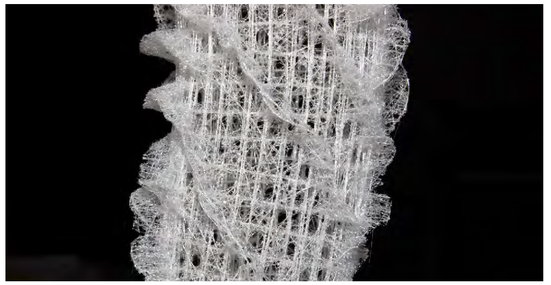

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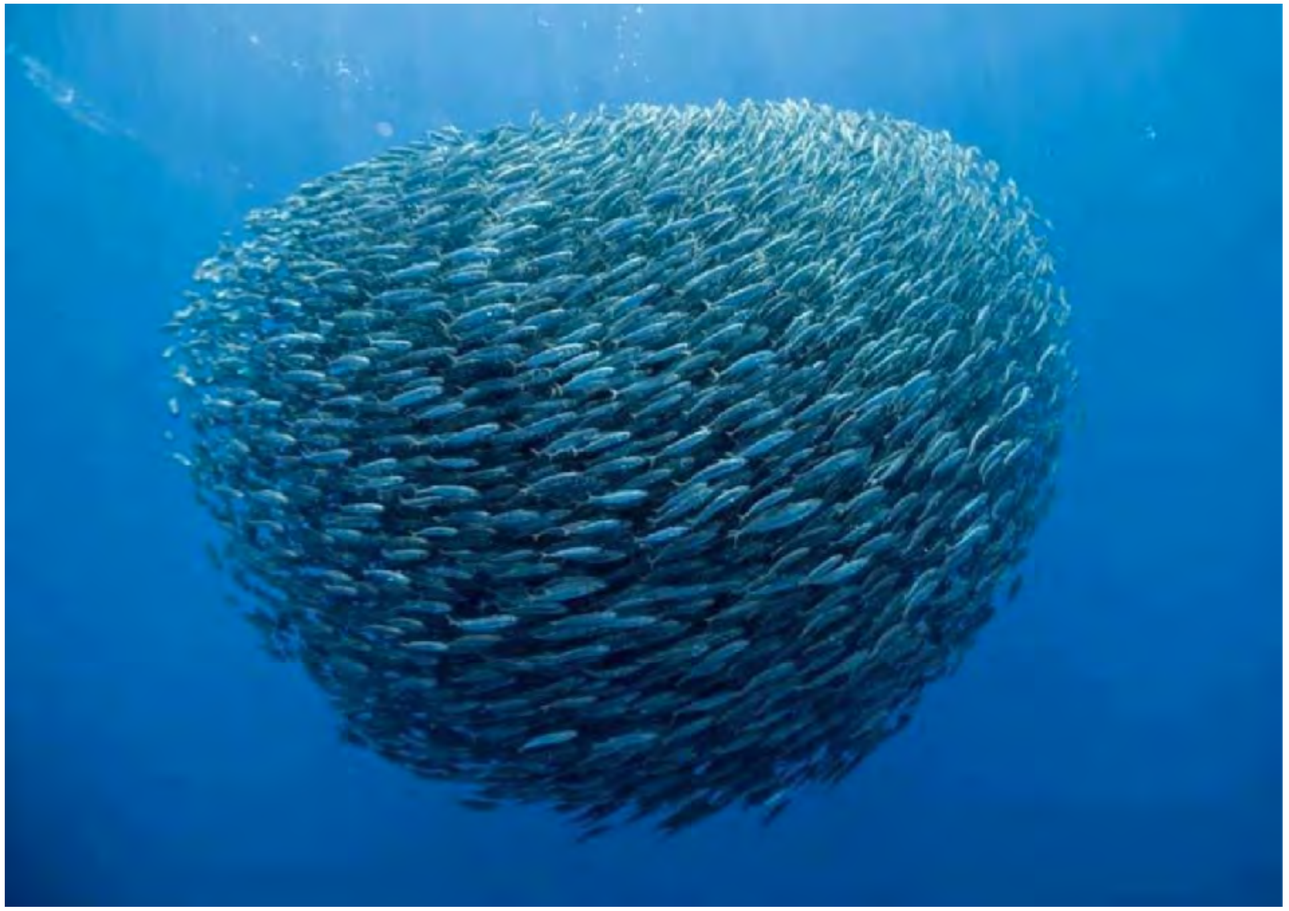

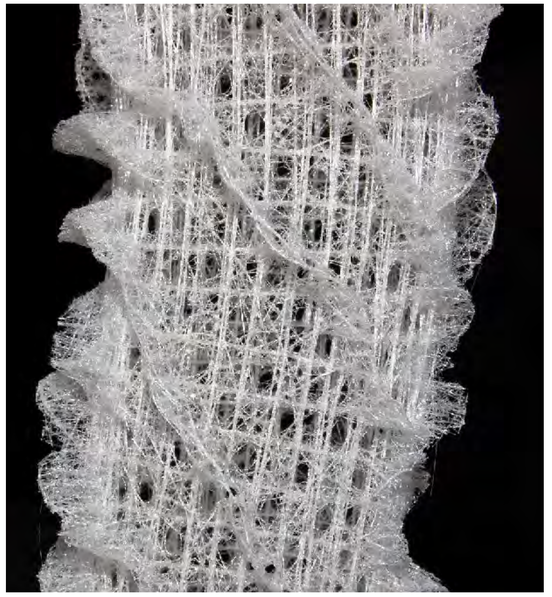

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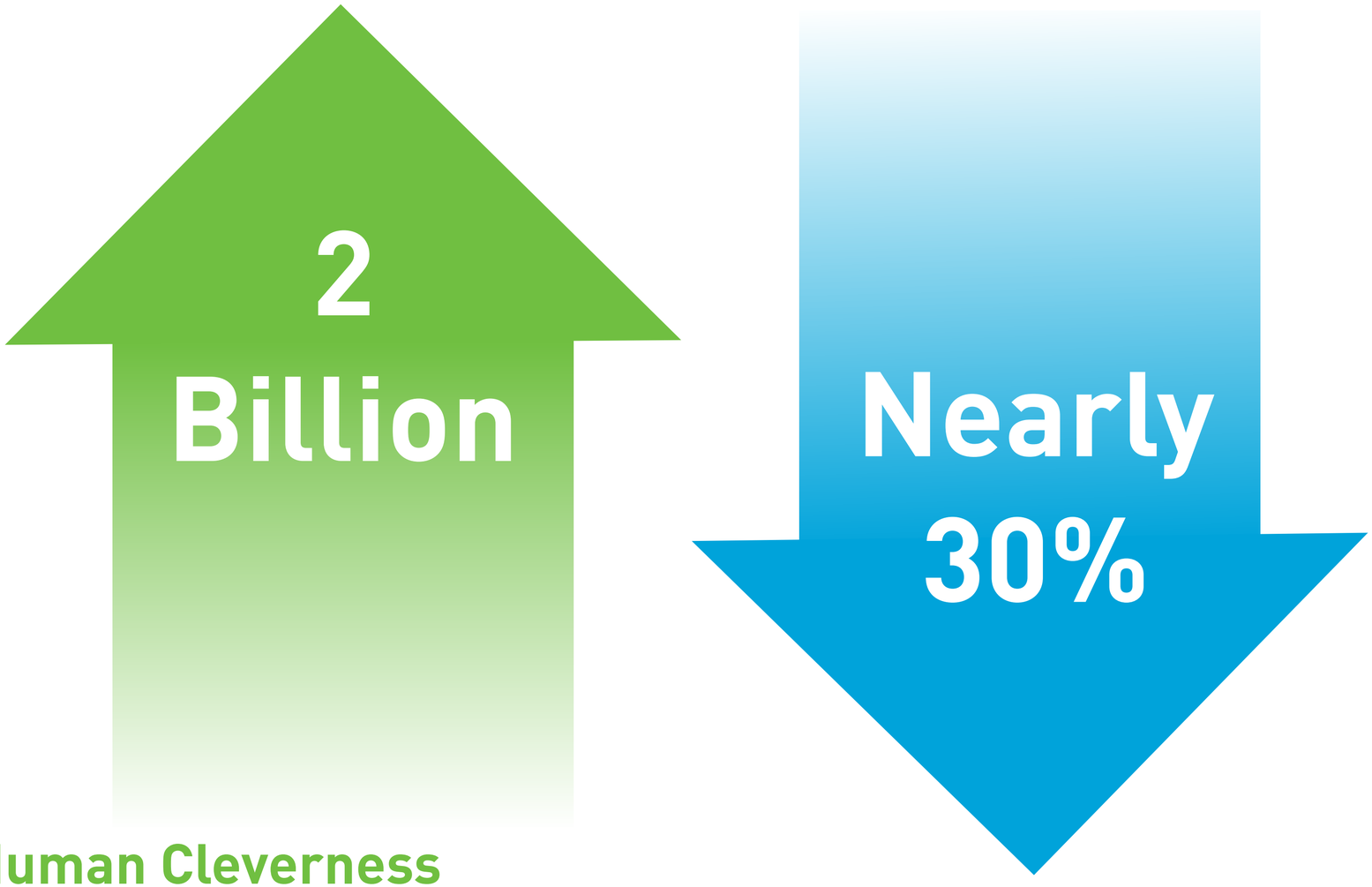


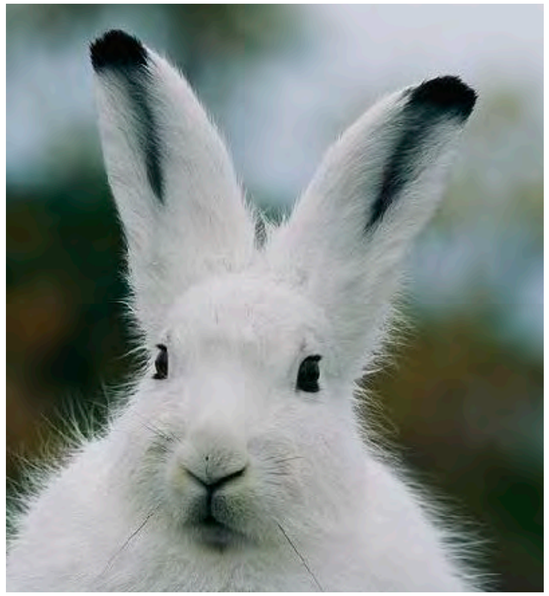
Nature as Mentor

5 Quiet our Human Cleverness

Childlike Curiosity

5 Quiet our Human Cleverness

Element 6
Well-Adapted vs. Mal-Adapted



6 Be Well-adapted

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Earth's Operating Conditions

Sunlight, Water and Gravity

Dynamic Non-Equilibrium

Limits and Boundaries

Cyclic Processes

6 **Be Well-adapted**

Element 7
Embrace Dynamic Non-Equilibrium

Dynamic Non-Equilibrium

"The planet is not moving towards an ordered state. Conditions on Earth are constantly changing. They are dynamic."

Dayna Baumeister,
Co-Founder Biomimicry 3.8

5 **Embrace Non-Equilibrium**

Element 8
Creating Conditions Conducive to Life Is the Ultimate Goal

Life’s Principles

- Evolve to survive
- Adapt to changing conditions
- Be locally attuned and responsive
- Integrate development with growth
- Be resource efficient
- Use life-friendly chemistry

Follow Life’s Principles

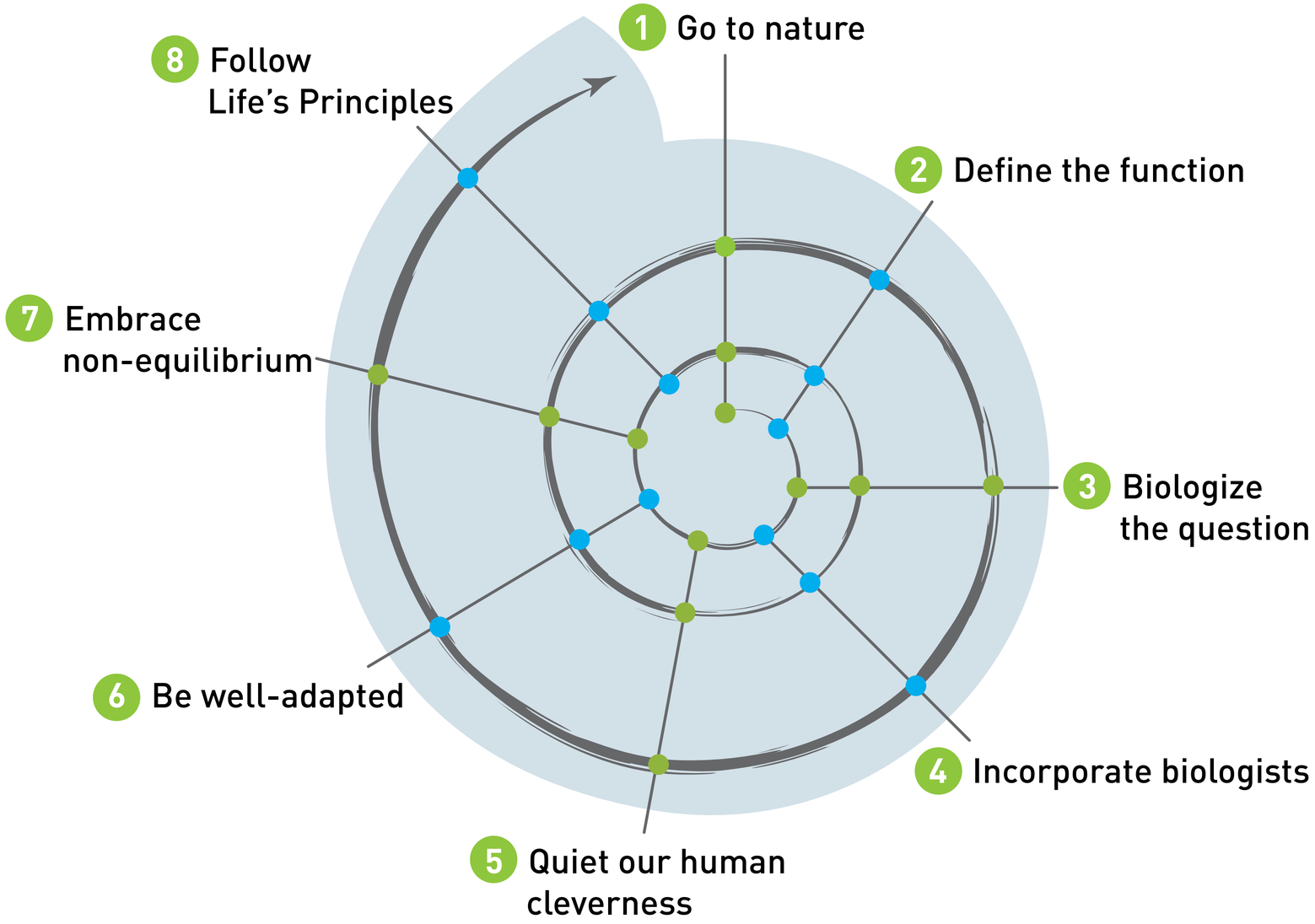
Life’s Principles

8 Follow Life’s Principles

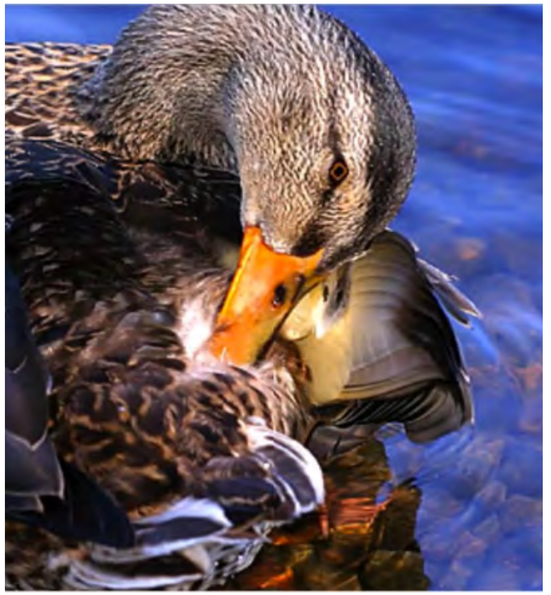
LIFE'S PRINCIPLES CHECKLIST	Y	N	?	Comments
Case Study: Digital Platform Sparks Supply Chain Learning				2degrees creates online networks for businesses seeking to improve sustainability throughout their value chains by facilitating con
Team: Lorraine Antonucci, Doug Studer				
CREATE CONDITIONS CONDUCIVE TO LIFE				The digital platform allows for collaboration among thousands of suppliers breaking down silos throughout the supply chain
• all aspects and elements of the design are optimized rather than maximized	√			It depends on interdependence for its success
• the design leverages its interdependence in the system	√			Not sure here, it claims to have the ability to improve wage and safety policies for healthy and fair working conditions, so maybe
• the design enhances the system's capacity to support life over the long haul			√	
EVOLVE TO SURVIVE				
• the design's success is based on whether or not it contributes to the continuity of life			√	per the comment above, perhaps it does, but not a direct correlation
• the design builds on what works	√			the design should get more and more effiecient as more users tap into the platform
• there are opportunities for cross-pollination of information and ideas	√			again this is the premise of the design
• the design receives and incorporates an influx of new information	√			It depends on this
• mistakes are used to encourage continual idea generation			√	I assume this could be true, but not sure yet
INTEGRATE DEVELOPMENT WITH GROWTH				
• both development and growth are optimized	√			The platform develops as more information is exchanged, enabling growth and efficiency
• components are modular and nested	√			don't know
• it is built to shape (e.g., no cutting and therefore no waste cuttings)	√			digitally yes, if you incorporate the necessary hardware this becomes questionable
• the components of the system are self-organizing	√			the user community is like crowd shourced information, so I think this is a yes as well
• the design fosters emergent relationships			√	the system should build relationships
• it creates more opportunities (niches) for life				don't know, other than the social reference above (line 7)
ADAPT TO CHANGING CONDITIONS				
• the design adapts to temporal and spatial changes	√			as the platform is used more it should build up it's information, thus adjusting
• the design maintains integrity by constantly adding energy, information, matter to improve the system	√			adds information
• the design withstands disturbance while maintaining function			√	not sure
• it incorporates a variety of different forms			√	not sure
• it duplicates critical elements			√	not sure
• its functions are distributed and decentralized	√			depends on input from entire user base
•the design includes multiple forms, processes, and systems to meet functional needs over time and space			√	not sure
• the design co-evolves with other parts of the system to increase the rate of adaptation	√			evolves per the √'s in this section
BE LOCALLY ATTUNED AND RESPONSIVE				
• the design fits into and integrates with the surrounding environment	√			assume this is true
• it is resourceful with opportunities and limitations	√		√	not sure
• materials used in the design are local and abundant	√			if by materials we can say information this should be true
• it harnesses freely available energy	√			if we can consider information as energy, then yes
• it fosters symbiotic, cooperative, community-savvy relationships			√	depends on cooperation to succeed
• the design avoids competition by finding a new niche	√			not sure
• with other parts of the system to make the most of what is available	√			depends on cooperation to succeed
			√	depends on reciprocal action to succeed
	√			not sure
				should build on existing information
				depends on feedback to succeed
				depends on feedback to succeed

Innovating with Biomimicry

8 Essential Elements of Biomimetic Innovation



What Can Nature Teach Us?



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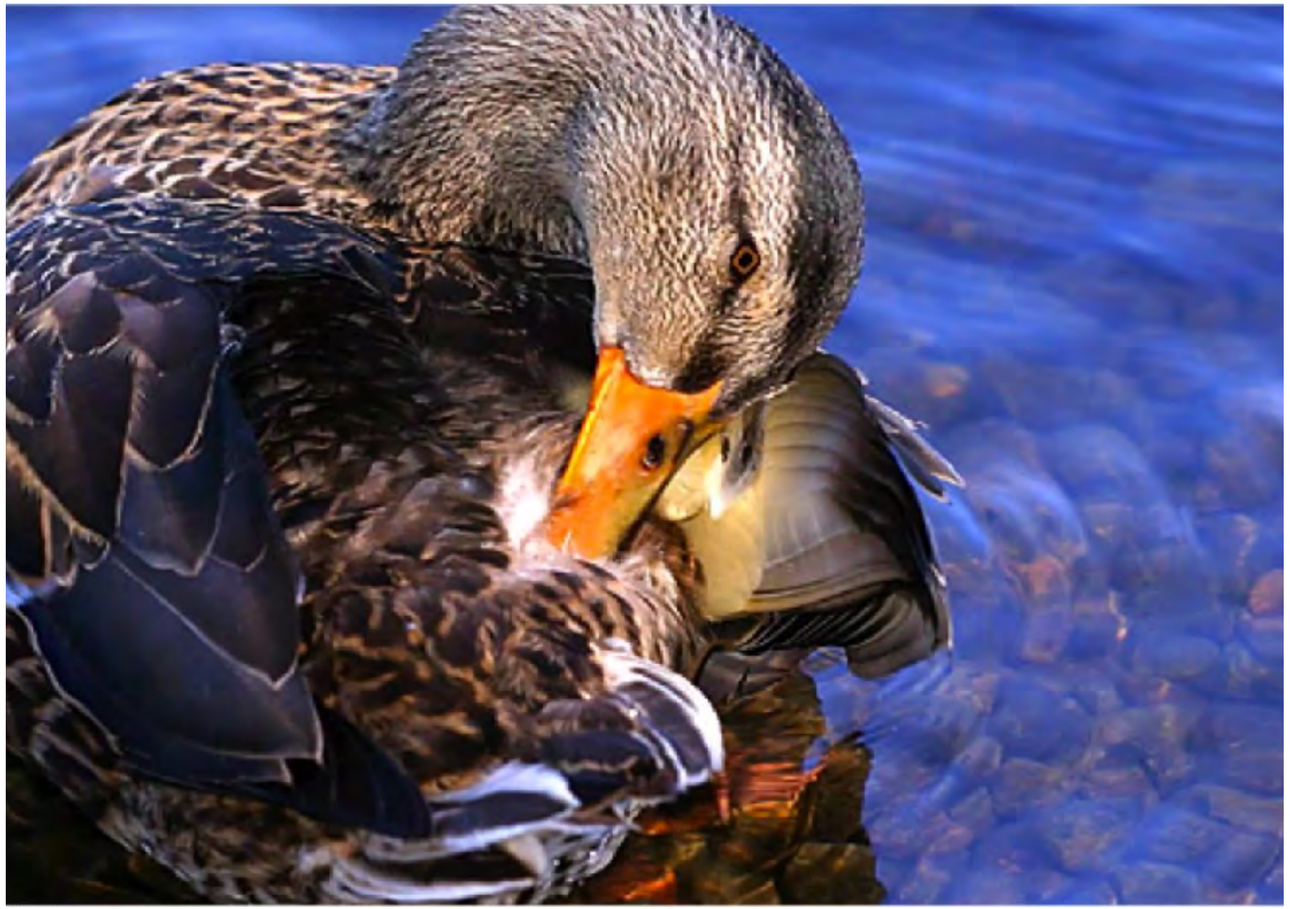

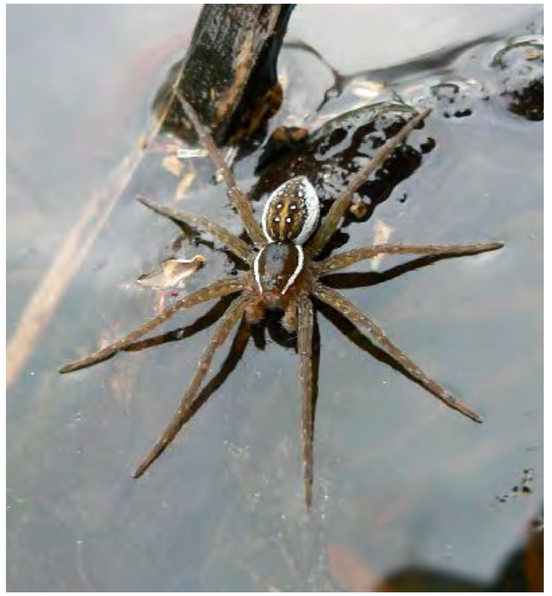

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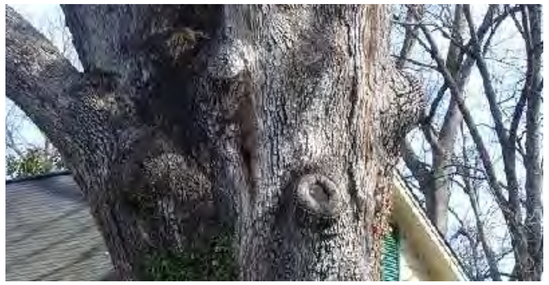

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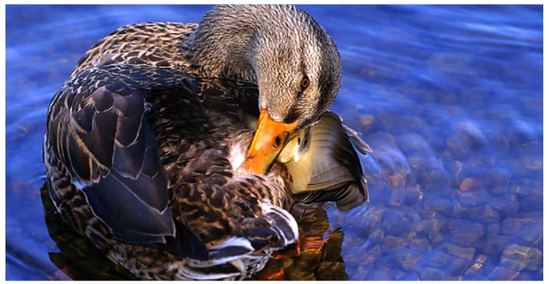
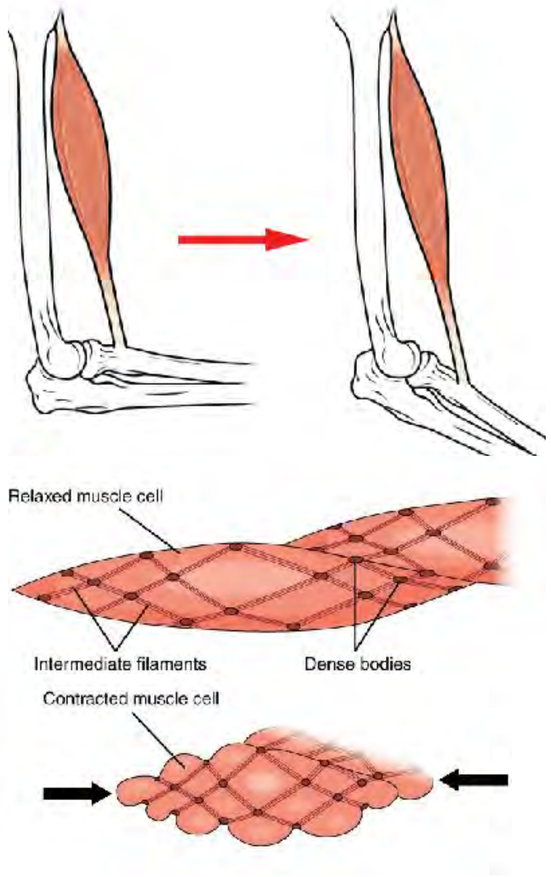


What Can Nature Teach Us?

What Have We Learned?

What Has Nature Taught Us?



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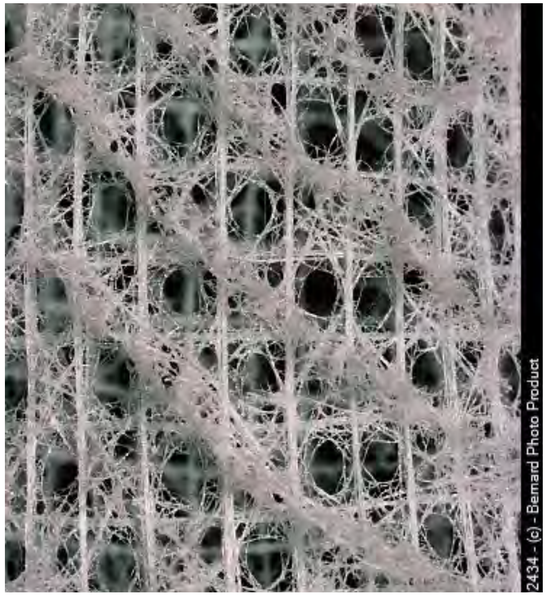

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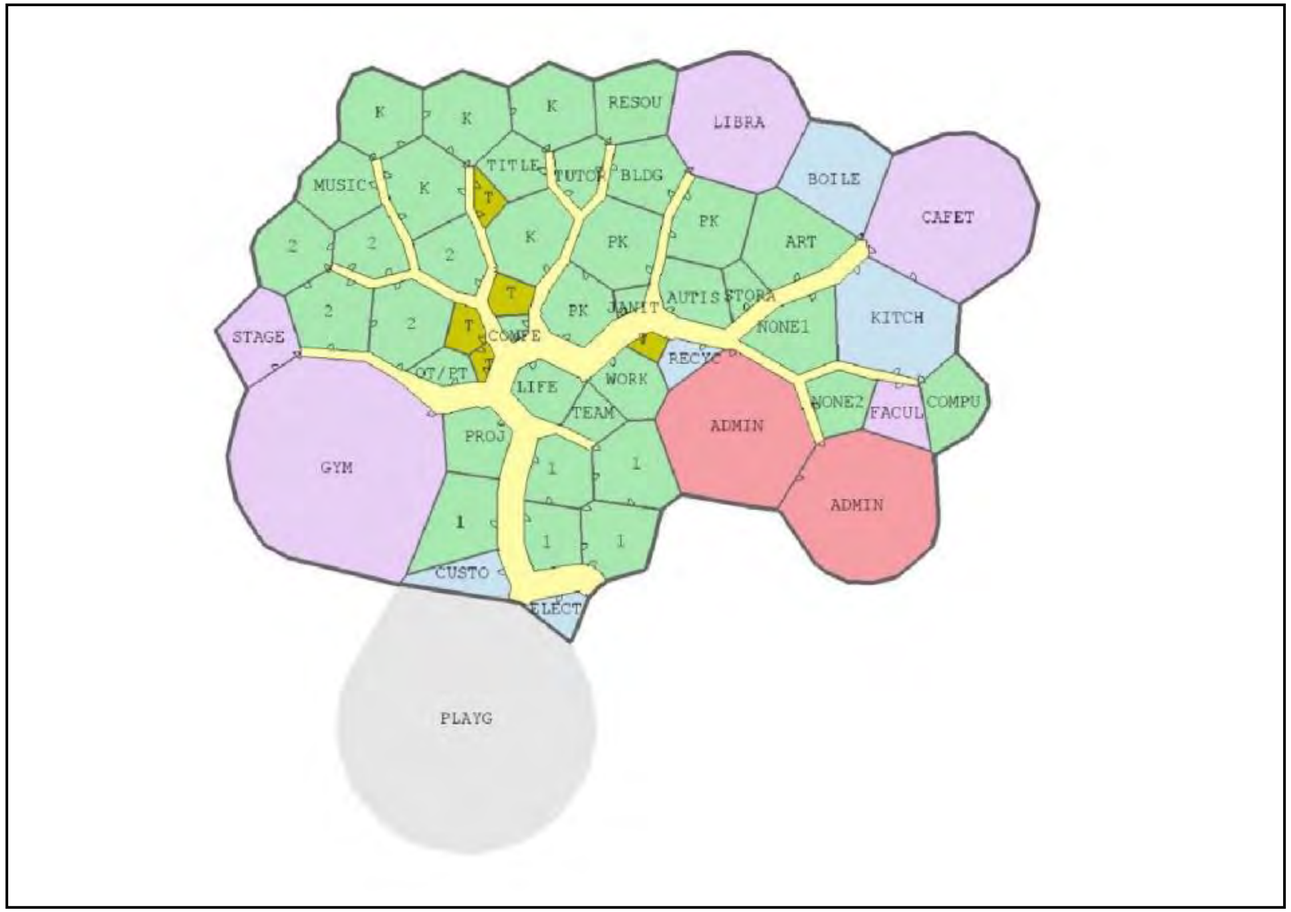

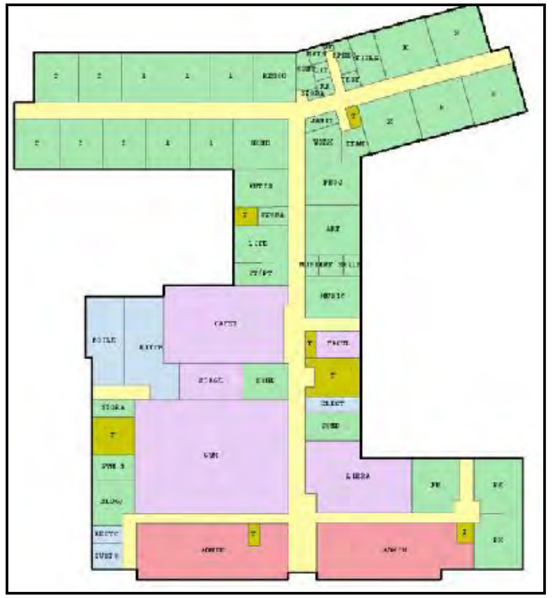

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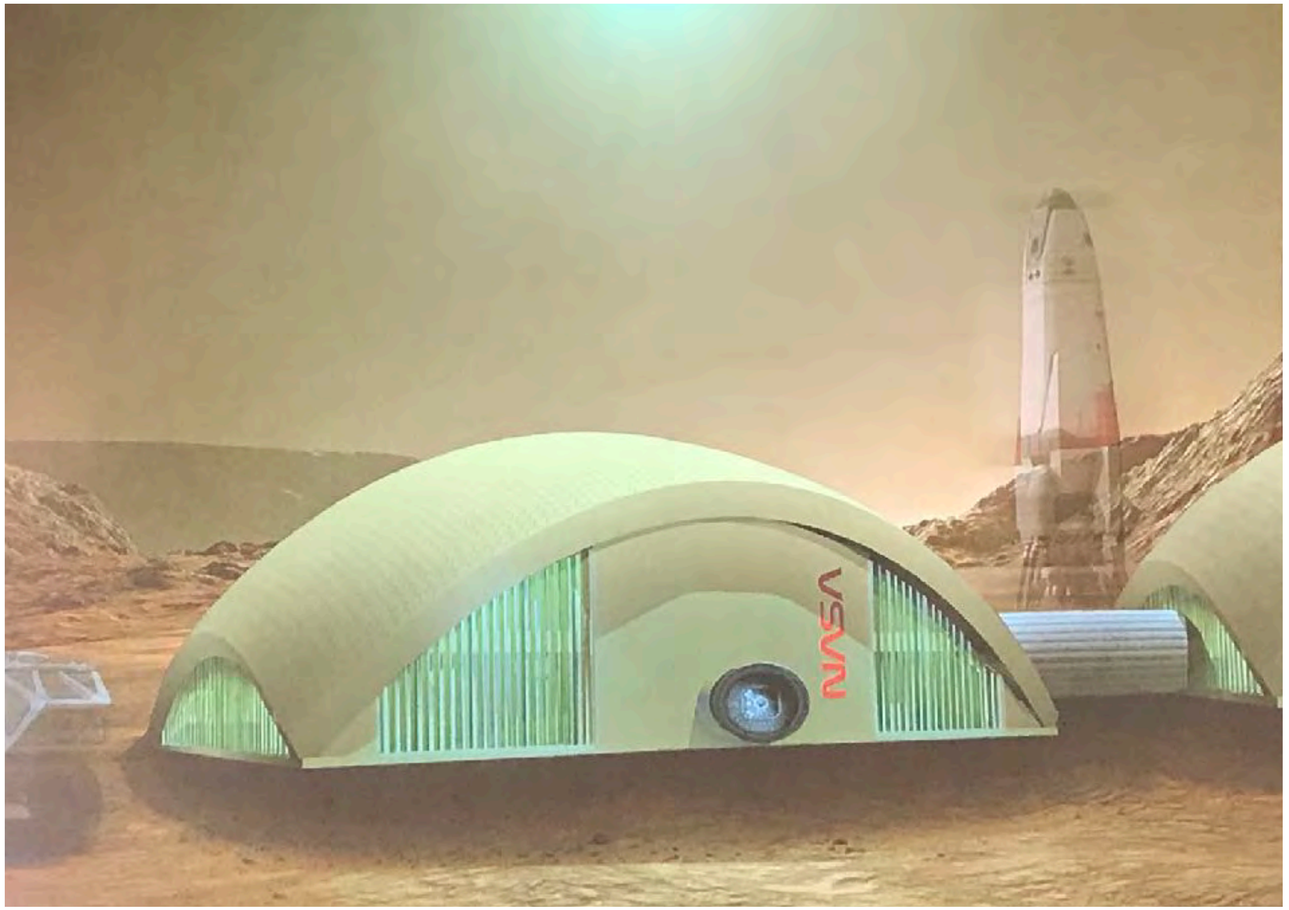

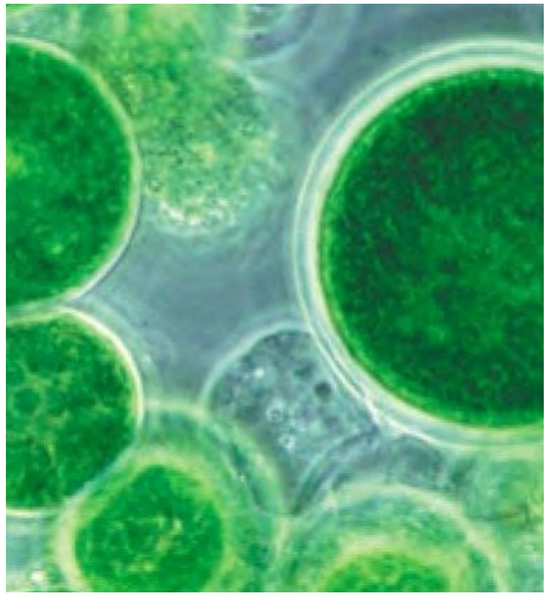

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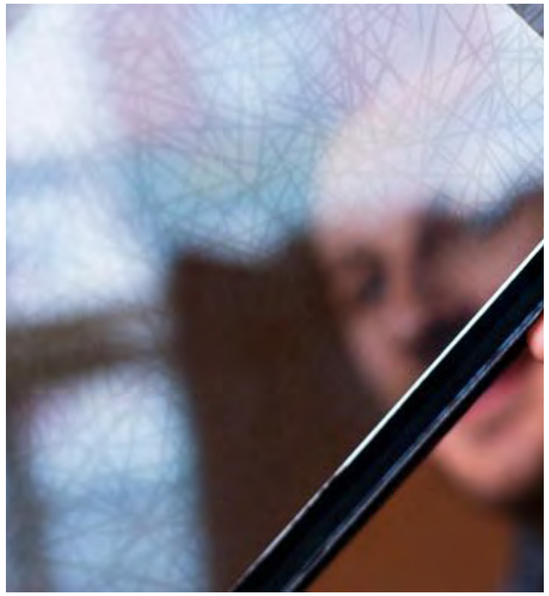

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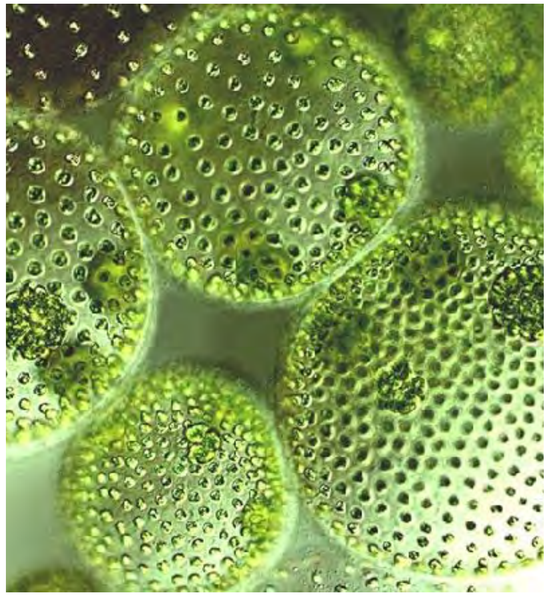


What Has Nature Taught Us?

What Has Nature Taught Us?


What Does the Future Hold?

What's Next?

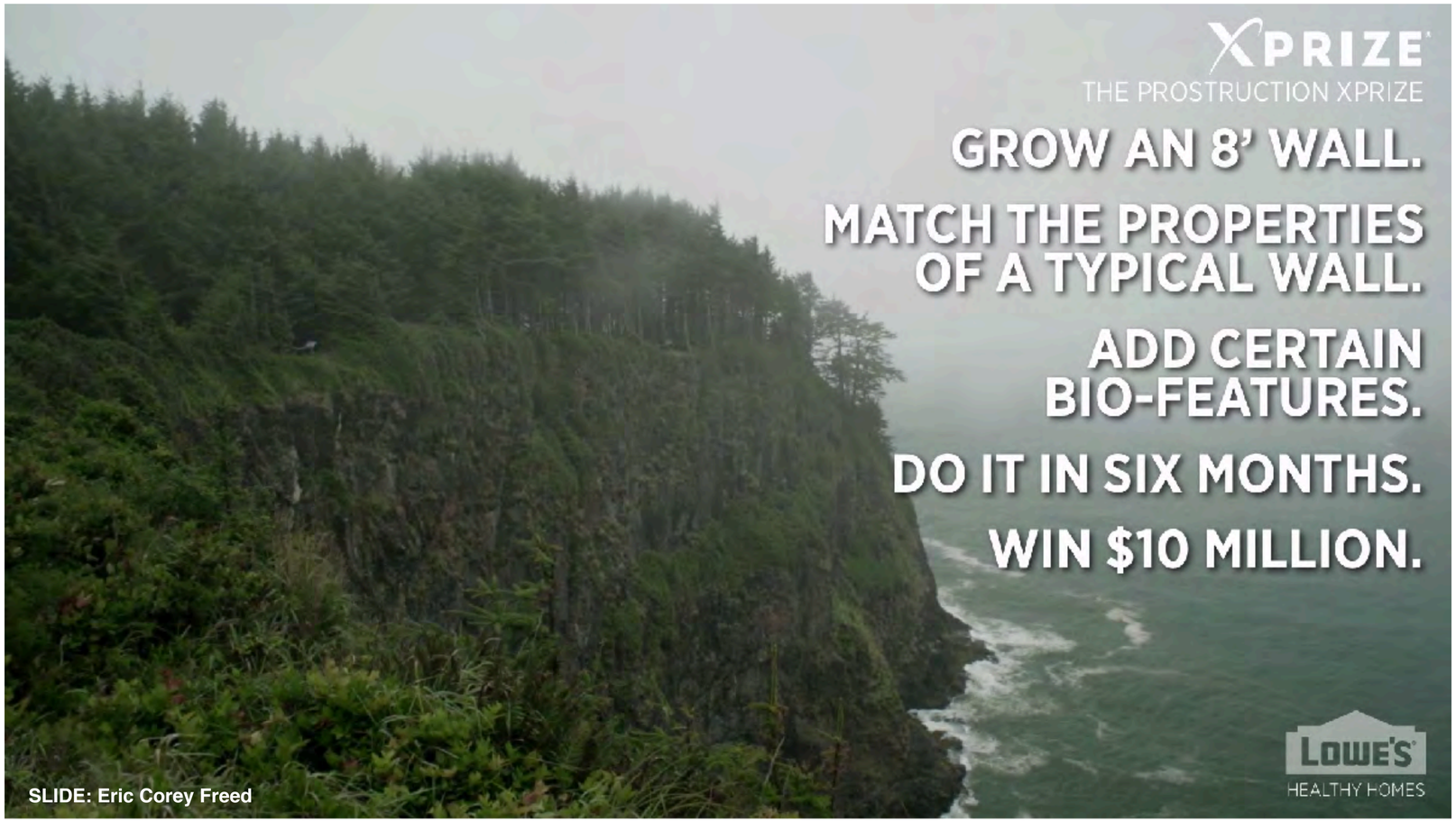
What's Next?

The Solution Tomorrow

What's Next?

SLIDE: Eric Corey Freed

The Solution Tomorrow



SLIDE: Eric Corey Freed

What's Next?

The Solution Tomorrow

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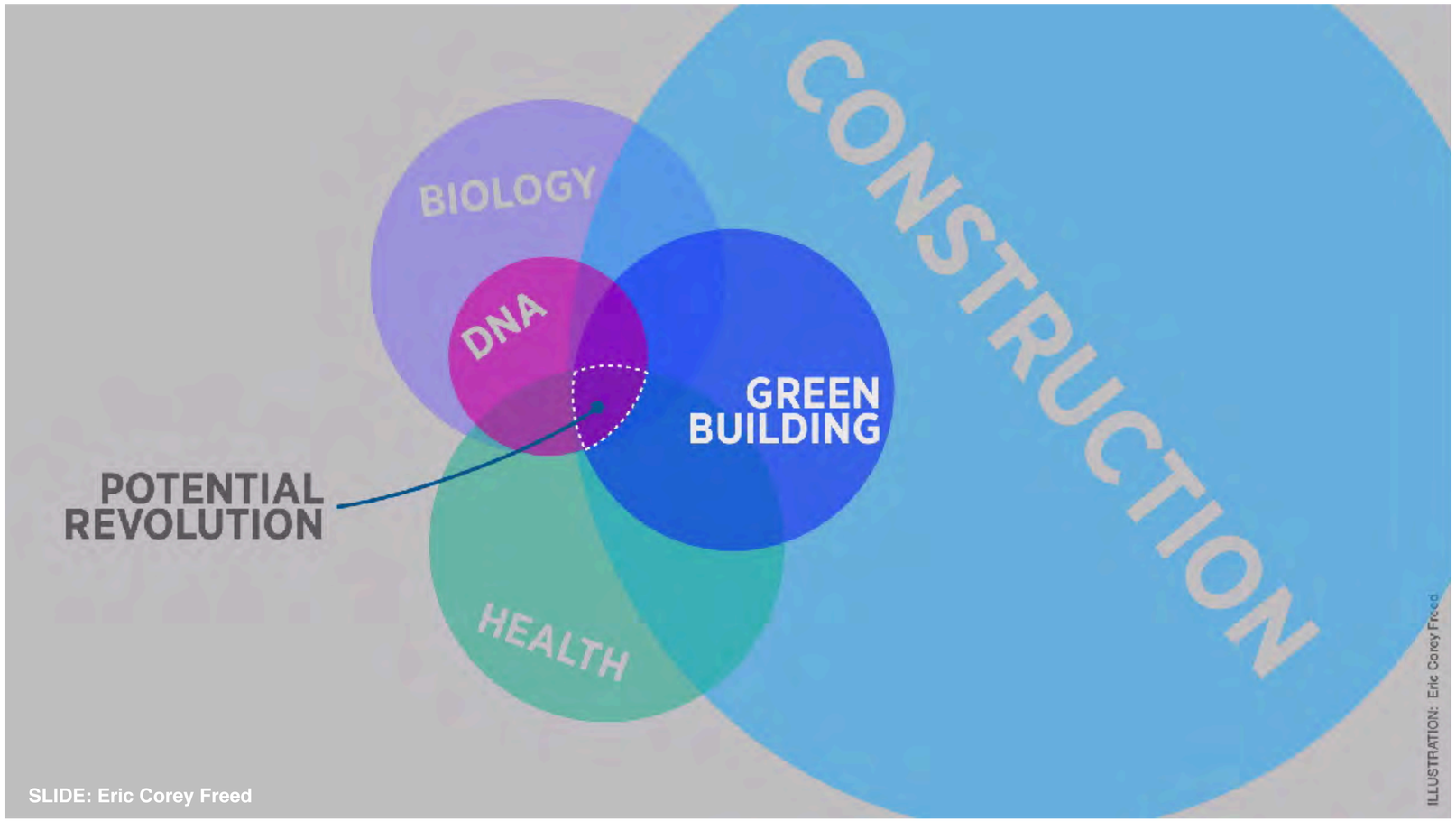
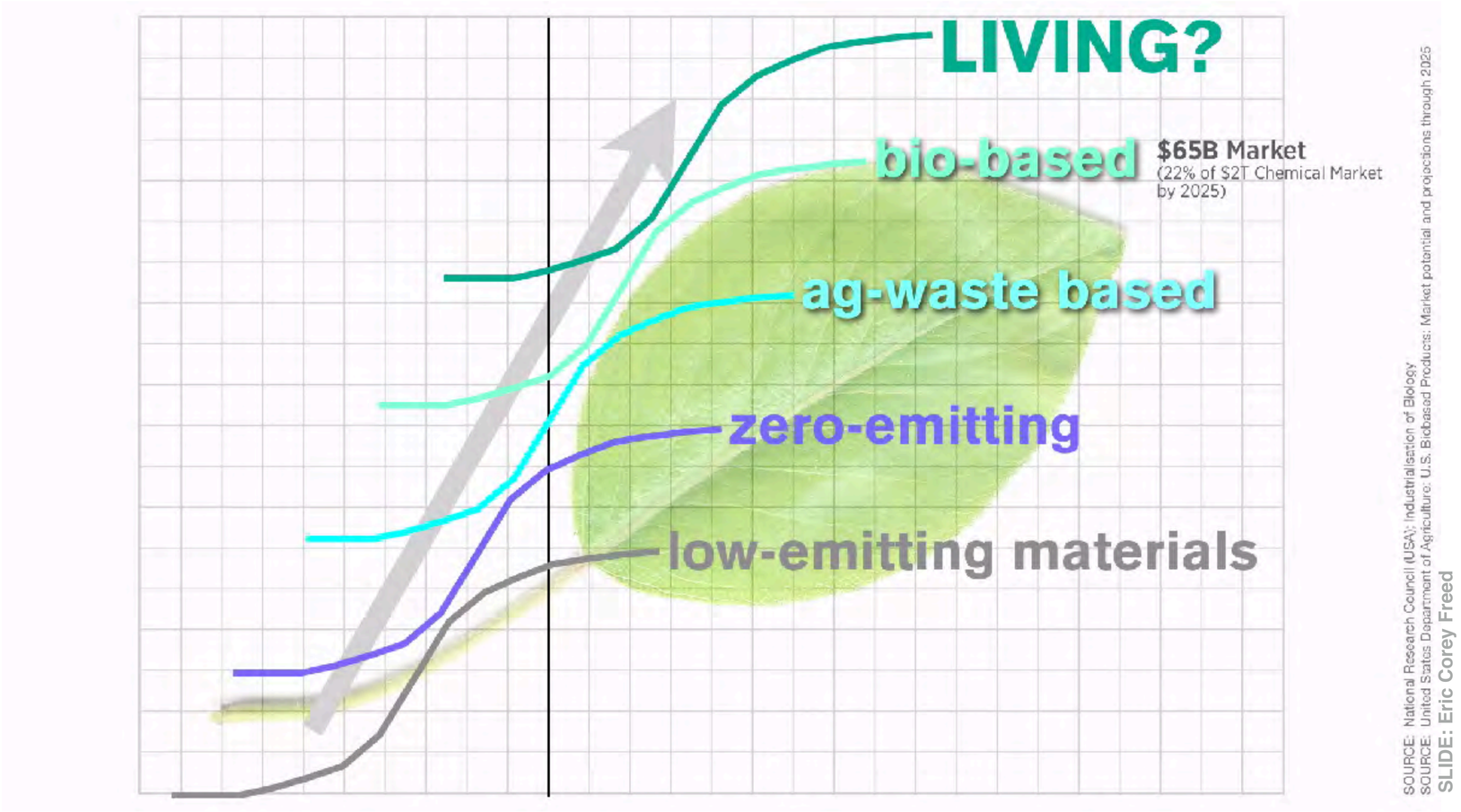
The Solution Tomorrow



What's Next?

The Solution Tomorrow



What's Next?

The Solution Tomorrow

What's Next?

“Human subtlety will never devise an invention more beautiful, more simple or more direct than does nature because in her inventions nothing is lacking, and nothing is superfluous.”

Leonardo da Vinci

Questions/Discussion

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NATURALLY INSPIRED BRANDING